AIR CONDITIONING HEATING & REFRIGERATION NEWS

The Newspaper of the Industry

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Inside Dope

By GEORGE F. TAUBENECK

Learn to live and laugh — thus delay your epitaph

Stories of the Week
Quotes of the Week
Social Notes
How To Get Hep
More Good News from Abroad
Good News for Bright Young Men
Worth Thinking About Twice

Stories of the Week

Receptionist in a Minneapolis business office, to make conversation, volunteered to "Dope" that she had discovered a surefire method of shucking an inept dancing partner.

"Please lead me to a chair quickly," she pleads. "My artificial leg is coming unscrewed."

Works every time, she snickers.

"These women!" griped a salesman. "They're always complaining about The Good Old Days when prices were much lower."

"Act surprised when they talk like that," advised his sales manager. "Raise your eyebrows. Ask them if they aren't too young to remember those Good Old Days."

Quotes of the Week

One father is more valuable than a hundred schoolmasters. —GEORGE HUBERT.

Time may be a great healer, but it's no beauty specialist.—QUENTIN WALTERS.

To retire a man when he is still going strong may literally kill him. Interesting work is the closest thing to an elixir of youth that man has yet discovered.—*Cresset.*

Social Notes

Recent engagement will be of interest to many industry members. The future bride is Carol Schellenberg, daughter of Mr. and Mrs. Arthur B. Schellenberg of Phoenix, Arizona.

As many of Dope's readers know, Art formerly was president of Alco Valve Co. and of the old Refrigeration Equipment Manufacturers Association. Art presently is a state senator.

The bride-to-be is a senior at Smith college. Her future husband is Pfc. Robert Simpson Charles 3d, who now is stationed in Greenland.

Don Bosseler, the crunching Washington Redskins fullback,

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CRMA Expects Better Sales During 1959

Industry Shipments Running Nearly 6% Ahead of Last Year

FRENCH LICK, Ind.—A majority of the executives attending the annual spring meeting of the Commercial Refrigerator Manufacturers Association here, after thoroughly exploring the subject, concluded that 1959 should prove to be one of the commercial refrigeration industry's best years from the standpoint of sales volume.

Combined industry shipments, it was revealed, were nearly 6% above a year ago for the first quarter of 1959, with an average backlog of about 30 days, or slightly above normal. Order bookings have been running well ahead of last year, a pronounced pickup within the past six weeks being reported.

Individual reports on the order trend ranged from "slightly ahead" to several as high as 15 to 20%. Demand was said to be chiefly concentrated on self-service open-type equipment of all classes, with multiple-deck display cases moving to the fore. A better-than-average demand was also indicated for reach-in refrigerators, as used principally in the food service field.

It was the consensus that despite rising costs, continued pressure for higher wages and more "fringe" benefits, there could be a material improve-

(Concluded on Page 34, Col. 1)

NAPC To Meet In Miami Beach June 1 to 4

WASHINGTON, D. C.—Some 6,000 contractors and industry representatives are expected in Miami Beach, Fla. June 1-4 for the 77th annual convention of the National Association of Plumbing Contractors.

The convention will be conducted concurrently with the National Plumbing - Heating - Cooling Exposition where more than 100 exhibitors will show the latest in plumbing, heating, and air conditioning equipment, beginning Sunday, May 31, through June 3, in the Miami Beach Exhibition Hall.

Headline speakers at the con-

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Air Conditioning Sales Appear Rosy; Mfrs. See Good Gains; Retail Reports Look Good, Too

DETROIT — Sales picture in the air conditioning industry right now looks rosy—manufacturers almost universally report good gains over the last two previous years, movement to dealers has been good, and retail sales, while scantily reported thus far, show general improvement over last year.

While the industry won't have a real clear picture of the retail sales picture until around Sept. 1 (traditionally the end of the air conditioning "sales year"), some industry executives think that any prolonged heat waves in the major population and marketing areas could result in some sales "breakthroughs" that might set records in all categories of equipment.

The possibility that the demand for air conditioning might create shortages—the *New York Times* in a recent article headlined "Shortage Looms in Room Coolers"—is considered unlikely. (A top industry sales executive, queried on this point, replied "I think it's a very remote possibility, but wouldn't it be wonderful!").

Current reports of manufacturers' sales continue to back up the optimistic reports issued earlier this spring. A Carrier Corp. executive was reported as stating that purchases by dealers from his distributors so far this year were 32% above those in the first four months of 1958. For the first four months, Fedders Corp. deliveries to distributors were 9% ahead of the

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Giordano Sees Heat Pump as 'Bright Spot'

PORTLAND, Ore.—Evidence that the heat pump is a bright spot in the air conditioning picture was presented here recently by Salvatore Giordano, president and board chairman of Fedders Corp.

He cited several home developments that have taken as many as 700 heat pumps.

Giordano spoke at the annual air conditioning and heat pump show of Portland General Electric Co.

Declaring that the industry has taken the heat pump out of the laboratories, Giordano stressed that "Now we must put our emphasis on selling."

"Like the mousetrap," he said, "we will never stop trying to improve the heat pump. But now, let's get down to serious business, the business of putting these heat pumps, that we've labored so long to develop, into Portland homes and businesses."

Pointing out that "The ball has already begun to roll," Giordano said: "Let me give you just a few examples of some jobs that Fedders, just one manufacturer, has closed.

"A housing project in West Hollywood Beach, Fla., is using 500 of our central heat pumps as the sole source of heating and cooling. . . . This builder is putting the Fedders heat pump in a home selling for $11,900. . . .

"We are installing 200 heat pumps in a development in Virginia. We have other large jobs in Texas and Mississippi, and have just contracted for 700 units with a Kansas City developer. And there are plenty of one and two unit jobs," also."

Asserting that the Mason-

(Concluded on Page 10, Col. 1)

McQuay Sales, Profits Hit All-Time High

MINNEAPOLIS — Sales and net profits of McQuay, Inc., manufacturer of heating, air conditioning, and refrigeration equipment, reached an all-time high for the first quarter of 1959, according to a report by B. E. James, president.

Net sales in the first three months of 1959 were $3,670,267, as against $2,461,495 in the last three months of 1958, and $3,546,882 in the first quarter of 1958.

Net profit in the first quarter of 1959 was $120,446, or 38 cents a share on 311,745 shares of common stock, compared with $110,622, also 38 cents a share, on 284,197 shares of common stock in the first quarter of 1958.

McQuay last month completed a public offering of 50,000 shares of common stock, with proceeds to be used for additional working capital. In 1958, net sales were $12,464,000.

Leon T. Mart Dies After Heart Attack

KANSAS CITY, Mo. — Leon T. Mart, 67, founder and chairman of the board of the Marley Co., died recently at Menorah hospital following a recurrent heart attack.

He had returned to his home two weeks earlier after spending three months in California recuperating from an attack suffered while vacationing there.

He formed the Marley Co. in 1922 and was its president from that time until March 21 of this year when he was elected board chairman. During this period, the company has grown from a small-scale sales group to a manufacturing organization with world-wide operations.

Air Conditioning Helps Launch 'Titan'

Air conditioning and refrigeration equipment has a big part in the U. S. Defense program—and in many phases of the missiles program it is playing a vital role.

The largest U. S. missile with the longest range is the "Titan." The story of the complex system which provides air conditioning for certain of the Titan's operational phases is told on pages 26-29 of this issue. Plans are under way to publish further information on the use of the industry's products in the missile program in future issues.

Coleman Sales, Earnings Up Substantially

WICHITA, Kan. — Sales and earnings of The Coleman Co., Inc. improved substantially in the first four months of 1959, the firm reported.

Consolidated net sales were $13,685,016, an increase of $2,090,039 over sales of $11,594,977 in the first four months last year.

Net income was $416,864 compared with $17,466 for the same period in 1958.

Despite the marked gain, profits in the first four months amounted to only 3% of sales, it was pointed out by Sheldon Coleman, president and chairman of the board.

Stockholders of the company, in their annual meeting here, voted a charter amendment which increases the authorized common stock from 400,000 to 1,200,000 shares.

The amendment provides for a 3-for-2 stock split, authorizing the issuance of one additional share of common stock for each two shares outstanding and clarifies the extent of pre-emptive right of holders of common stock.

Certificates for additional stock will be distributed to stockholders of record at the close of business on May 19, and will be mailed on or about June 2.

In a separate action, the stockholders approved a restricted stock option plan for selected key employes including officers of the company or its subsidiaries.

The board of directors declared a dividend of 15 cents a share on common stock including the additional shares resulting from the stock split.

Fedders Securities To Capitalize Finance Operation

WASHINGTON, D. C. — A registration statement has been filed by Fedders Corp. with the Securities & Exchange Commission for $3,815,800 of sinking fund subordinated debentures, due in 1979, and warrants to purchase 152,632 common shares.

Fedders said it will offer the securities in units consisting of $100 of debentures with warrants for the purchase of four shares. One unit will be offered for each 50 shares held.

According to the manufacturer, proceeds will be used to provide capitalization of a new subsidiary that will finance purchases of Fedders' air conditioning and heating products by distributors and dealers.

Hotpoint To Make Water Coolers for G-E

CHICAGO — General Electric water coolers will be manufactured by Hotpoint's commercial equipment department starting in June, it was announced by William C. Ayres, general manager.

The announcement signals the start of a major expansion program at the Chicago Heights plant of the department.

Marketing arrangements for the water cooler line were put into effect at the commercial equipment department home office on April 1. Distribution of the line comes under the broad direction of Leonard Smith, department marketing manager.

Charles J. Rigby is manager of water cooler sales. He has been associated with G-E since 1936 and with the water cooler business since 1938.

Reporting to Rigby are five district representatives, all of whom are specialists in water cooler sales. They are P. C. Martin, Chicago; H. J. Carr, Louisville; A. J. D. Helwig, New York City; Thomas Woodford, Atlanta; E. M. Richardson, Jr., New Orleans.

April Proves To Be Gibson's Most Successful Month

GREENVILLE, Mich.—April was the Gibson Refrigerator Co.'s most successful month from both a profit and sales standpoint since 1951, according to C. J. Gibson, Jr., president, and W. C. Conley, vice president in charge of Gibson sales.

All products showed increases. Room Air Conditioner Sales Manager J. F. Klintworth reported that sales are 52% ahead of March and 88% ahead of April 1958. Two-horsepower models are the air conditioning leaders.

Freezer sales set the pace with a 55% gain over March and a 229% increase over April of last year.

Canadian Subsidiary Formed by Bally

BALLY, Pa.—Formation of a wholly-owned subsidiary, for the distribution in Canada of Bally ice cream cabinets, walk-in coolers and freezers, and refrigerated display cases, has been announced by Leon Prince, general sales manager of Bally Case & Cooler Co.

Name of this new company is Bally Case & Cooler of Canada, Ltd. Headquarters will be in Montreal. Shipments will be made from warehouses in both Montreal and Ottawa.

The operation will be under the charge of Antonio Nadeau who originally took on the distributorship of Bally cases in Quebec in 1951. In 1955 he joined Pioneer Appliance Service Ltd., who at that time took on distribution of Bally for the entire country of Canada.

This is a new form of distribution for Bally, which formerly used export agencies and private companies.

Miller Named Manager Of York Marine Sales

YORK, Pa.—Wilbur S. "Barney" Miller has been named manager, marine sales, for York Div. of Borg-Warner Corp.

The announcement was made by Austin Rising, vice president and director of marketing for York, who said the appointment was a result of the firm's greatly increased activity in marine cooling and refrigeration.

Miller has been serving as manager of sales development.

For Your Reprint Copy

"Short, Short Course in Air Conditioning Fundamentals." By D. C. Schaffer. Mail this ad with your name and address to: Air Conditioning, Heating & Refrigeration News, 450 W. Fort, Detroit 26, Mich.

Only 25¢ each.

THROW YOUR COMPRESSOR *OUT!

*OUTSIDE, THAT IS!

KRAMER'S outdoor compressor is the only compressor designed to operate outdoors for any application under all temperatures and weather conditions.

Completely assembled, wired, tested and factory run-in, it arrives on the job ready to operate. Simple hookup eliminates costly installation and control adjustment time. Kramer's outdoor compressor ends waste of valuable indoor space.

WRITE FOR BULLETIN

KRAMER

OUTDOOR COMPRESSOR

KRAMER TRENTON CO. • Trenton 5, N. J.

46 YEARS OF CONTINUOUS ACHIEVEMENT IN HEAT TRANSFER

'Lone Star' Air Conditioner for Humid Areas Removes Moisture 'by the Barrel'

DAYTON—Development of a dry-cooling system for room air conditioners, said to eliminate clamminess on humid days, whether hot or mild, has been announced by Frigidaire Div. of General Motors Corp.

The system, incorporated in two "Lone Star" models—each with 12,400 B.t.u. of cooling capacity—was unveiled during national "Beat the Heat Week," May 17-24.

Said Herman F. Lehman, GM vice president and Frigidaire general manager:

"Remarkable dehumidification capacity has been engineered into these Lone Star units. They can remove up to three barrels of water a week. There is a special 'Hi-Dri' control making possible continued dehumidifying with reduced cooling on humid days when temperatures are mild."

"LONE STAR" unit dehumidifies without overcooling.

Because of the Lone Star models' capacity, they are said by Frigidaire to be very effective in the hottest dry areas, too. The units have been in production for over three months.

There are nine other room conditioners in the Frigidaire 1959 line.

Commercial-Industrial Orders Up for Mathes

FORT WORTH, Texas — The Mathes Co., division of Glen Alden Corp., "already enjoying a good year in residential-commercial equipment sales," is experiencing a "dramatic upturn" in orders for 7½ and 10-ton split system cooling and heat pump systems for commercial-industrial application, the firm announced.

Benjamin R. Ebersman, Mathes president, said the increase is 64% for the period to date since announcement of the firm's 1959 product line last November, as compared with the same period in the prior year.

Increased acceptance and demand for multiple unit applications of high tonnage by industrial users were cited by R. B. Starnes, vice president-sales manager, as being responsible for much of the increase.

"An example of this type is a 120-ton installation recently completed in a textile manufacturing plant in South Carolina, using 12 10-ton split system heat pumps," the announcement said. "This purchase followed the installation a year earlier of 50 tons of identical equipment for a smaller plant built at that time."

A great portion of the sales increase must be attributed to the 15-ton and 20-ton blower evaporator units incorporated in the Mathes line last fall, according to E. A. Schwartz, vice president-engineering.

These indoor blower units offer advantages in space saving and dollar saving by reason of the fact that only a single duct system, filter racks, etc., are required, it was stated. However, two condensing units installed with the single indoor blower unit, provides in the 15 and 20-ton capacities two-stage cooling or two-stage heat pump, according to Mathes.

Vapomatic Sales Rise 37% In 1st Quarter

LOS ANGELES — Recold Corp. announced that sales of its patented "Vapomatic" units were up 37% for the first quarter of this year as compared to the first 1958 quarter.

Figures further show, the company said, that Vapomatic sales were up 35% in 1958 as compared to 1957.

NEWS readers are invited to write to the editor giving their opinions on any subject of interest to the industry.

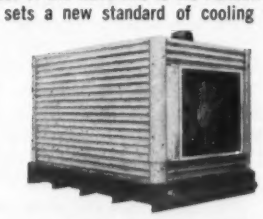
Do Your Specs Call for "WOOD COOLING TOWERS?"

Marley Makes 'em All

Marley Permatowers®

In addition to Marley's complete line of steel packaged cooling towers (see facing page), Marley makes a complete line of packaged wood towers for those jobs where unusually corrosive conditions are of paramount importance, and other models are the last word in first-cost economy.

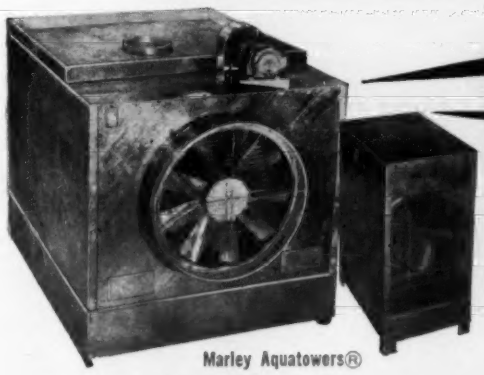
Newest of the wood line is the PERMATOWER that sets a new standard of cooling tower durability through the liberal use of inert materials throughout. Double-Flow design principle makes them adaptable to restricted locations. WOOD FORCED-DRAFT AQUATOWERS, with durable redwood structures and asbestos cement board casings, are also long-lived towers and top discharge solves many location problems. SPRATOWERS combine engineered, plus-performance spray system and design simplicity for best natural draft cooling and rock bottom economy. Your Marley distributor can supply these products or complete application information.



Marley Wood Aquatowers®

Marley SpraTowers®

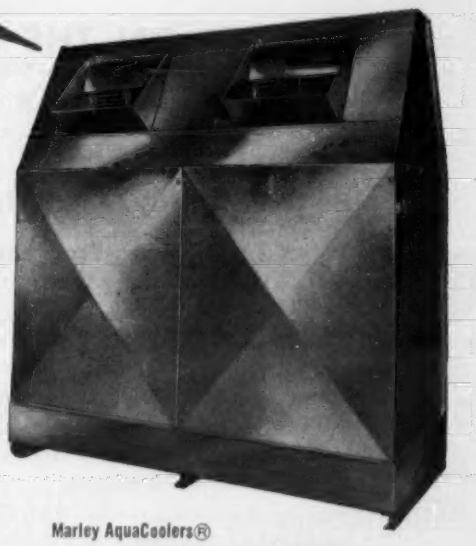
Do Your Specs Call for "STEEL COOLING TOWERS?"



Marley Makes 'em All

(hot dip galvanized after fabrication)

Marley Aquatowers®



Marley AquaCoolers®

MARLEY AQUATOWERS® are the world's original and most popular steel packaged water cooling towers that offer user and contractor everything that spells *complete satisfaction*—performance, economy, minimum maintenance and lasting durability.

Fourteen models with capacities from three tons nominal and up permit selection of an Aquatower ideally suited for any specification. For larger capacity jobs, Marley offers twin Aquatowers served by a common cold water basin, that feature operational flexibility, permit "sensitive" cold water temperature control.

So, just name the time, the place, the gpm, and special installation requirements — your nearby Marley distributor will furnish a steel Aquatower that fits the job as though it had been custom-designed. All models feature Marley-designed mechanical equipment, lifetime wood filling, ease of disassembly (if necessary). Casings and multi-blade fans are hot dip galvanized after fabrication.

MARLEY AQUACOOLERS® feature quiet operation, full performance and installation in minimum plan area, making them top choice for indoor service—and equally adaptable to location out of doors. AquaCoolers are simply and economically vented and their centrifugal blower fans provide operating pressures that overcome draft loss developed by ductwork.

Balanced spray system uses Marley non-clog nozzles that minimize maintenance. Engineered spray water break-up and ample depth of MarPak filling deliver air-water contact that means full performance in every capacity size.

Ten models, nominally from 5 tons and up, are available from your Marley distributor. Smaller models are shipped completely assembled; larger ones reach your job in two sub-assemblies that are readily bolted together. Heavy, braced casings, basins and fan scrolls are hot dip galvanized after fabrication.

The Marley Company

MARLEY

The Marley Company

Kansas City, Missouri

Air Conditioning Sales Picture--

(Concluded from Page 1, Col. 5)

same period last year, and E. M. Becker, vice president, and sales manager, said that shipments by distributors to dealers were up 21% in the same period.

Shipments of Amana room air conditioners from Jan. 1 through the middle of May were up 68% over last year, according to George Foerstner, executive vice president, who also stated that dealers handling its line were breaking all pre-summer room air conditioner sales records. "RCA Whirlpool" room air conditioner sales are running 33% ahead of 1958, the company reported.

Previous reports from other top manufacturers—York, General Electric, Westinghouse, the Hupp Corp. divisions (Typhoon, Perfection, and Gibson), and divisions of National-U.S. Radiator Corp., reported gains ranging from 10 to 40%.

While many believe it probable that more impressive sales gains have been registered in central residential systems and in commercial and industrial equipment than in room units, it is easier to get a "fix" on the movement of room units.

A two-year forecast of room air conditioner sales made by a group of manufacturers said to represent around 75% or more of the business resulted in these figures (for calendar years):

	1959
Median (Average)	**1,500,000**
High Guess	**1,600,000**
Low Guess	**1,000,000**
	1960
Median (Average)	**1,700,000**
High Guess	**2,000,000**
Low Guess	**1,500,000**

Earlier this month, T. D. Eberhardt, marketing manager of G-E's Air Conditioning Department, was quoted in the *N. Y. Times* as stating:

"There has been a marked pick-up in retail sales in the last three weeks in some parts of the country. A long hot spell could cause a shortage of room air conditioners this year."

Time, the weekly newsmagazine, reporting on air conditioning prospects in its May 18 issue, stated that while the industry's sales were slow the last two seasons, "sliding along at roughly the 1956 level of $3.2 billion, this season is shaping up as the hottest in the industry's history."

Sellers of central residential air conditioners, says *Time*, "expect a boost from the record number of new houses going up this year; 10% of them will be built with central air conditioning vs. only 1.4% in 1952." The newsmagazine quotes the FHA as saying: "Within a few years, any house that is not air conditioned will probably be obsolescent."

It also stated that "manufacturers think that the biggest market—office and industrial uses—still lies ahead. The American Institute of Management estimates that when 15% of a city's desirable office space has been air conditioned, owners of the remaining 85% must install it to compete. Nationwide, the 15% mark is rapidly being reached."

'Time' Outlines Benefits of Air Conditioning

In discussing the industry's sales tactics this year, *Time* sums up part of the "benefits" story of air conditioning for the U. S. family, reporting:

"Armed with massive surveys, the industry's economists and sociologists proclaim that—

"Air conditioning cuts a family's bills for going out to air conditioned movies and restaurants by $5.80 per summer week, that it cuts the housewife's laundering time in half and her housecleaning time from 8½ hours per week to 4¾ (by reducing dust), that it causes adults to sleep two hours longer per summer night.

"The industry thinks that the savings in laundry and medical expense more than offset the cost of operating."

THE PEOPLE WHO KNOW REFRIGERATION BEST

DEPEND ON THE PEOPLE WHO KNOW TUBING BEST!

He Goes To Any Lengths To Help Solve Your Tubing Problems!

This guy really gets around. He's Connie Habecker, GM Steel Tubing Product Engineer. Today he's flying West with another solution to a customer's tubing problem: How to produce a new serpentine design on existing high-production equipment that will mean real savings. Tomorrow, he's scheduled for a meeting with design engineers on the East coast to go over blueprints of a new condenser design. His customers have learned that Connie can help them save money by calling on him early in the game. His engineering background includes valuable knowledge of design and production. And he really knows his tubing, and what it can do . . . for you and your product. He knows GM Steel Tubing is steel-strong, capable of taking any shape. And he knows it's quality-controlled many times beyond specifications . . . cleaner, in fact, than any other tubing you can buy. Put some on test today and see why GM Steel Tubing leads in refrigeration sales . . . by miles!

SEE SWEET'S CATALOG 1a/Ro

Rochester Products Division of General Motors, Rochester, New York

GM STEEL TUBING BY ROCHESTER PRODUCTS

AMERICA'S LARGEST MANUFACTURER OF REFRIGERATION TUBING

Scotsman Forms Distributor Advisory Group

ALBERT LEA, Minn.—Creation of a Distributor Advisory Committee by Scotsman, Queen Products, division of King-Seeley Corp., was announced recently by R. J. Lickteig, vice president and sales manager of Scotsman Div.

Lickteig said the purpose of the committee "is to represent the interests of the entire distributor and dealer organization in policy discussions embracing areas of sales, advertising, and service."

Eleven distributors were elected by and from the Scotsman distributor group. Distributor representatives are:

R. C. Reese, chairman, Reese & Long Refrigeration Products, Inc., New York City; Earl Yockey, vice chairman, American Refrigeration, Inc., Columbus, Ohio; C. S. Valenta, secretary, Scotsman Refrigeration, Inc., Monterey Park, Calif.; T. U. Cowger, Tresko, Inc., Kansas City, Mo.; C. E. Borden, A. E. Borden Co., Inc., Boston; William Ludwig, Arctic Refrigeration, Inc., Denver.

Also, Joseph Keil, Fountain Products Corp., Chicago; Tom Solomon, Solomon Refrigeration, Inc., Jacksonville, Fla.; C. "Steve" Waters, Waters Equipment Co., Tampa, Fla.; Fraser McGuire, McGuire Sales Co., Dallas; Jack B. Kelly, Carbonic Machines, Inc., Minneapolis.

The first meeting was held immediately following the recently concluded National Restaurant Show in Chicago. Lickteig said regularly scheduled meetings will be held in the future.

Hosler Is Marketing Manager for Kewanee, Nesbitt Products

DETROIT — Appointment of J. W. Hosler as marketing manager for Kewanee and Nesbitt product lines has been announced by John W. Brennan, president of American-Standard Industrial Div.

Replacing Hosler as air conditioning products marketing manager is R. A. Loebl, who joined American - Standard's American Blower Div. in 1951. H. C. Grubb has been appointed product manager for centrifugal refrigeration compressors replacing Loebl. Grubb joined American-Standard in 1955.

Bryant To Continue Gas Air Conditioning Schools Beyond Deadline—Interest High

INDIANAPOLIS — Bryant Mfg. Co.'s gas air conditioning training schools will be continued beyond the original deadline, the company announced.

These training classes are designed especially for distributor, dealer, and utility servicemen.

"Interest in the training program has exceeded all expectations," it was stated.

"Since individual trainee participation in 'problem solving' is an important part of the course, it was decided to schedule additional schools rather than increase the enrolment.

"Curriculum includes the theory and practice of absorption cooling, starting with a basic cycle and illustrating the refinements required to produce efficient, economical operation. The students then actually install and operate a production unit.

"Following installation, the unit is 'bugged' without the knowledge of the class. The resulting malfunction must then be analyzed and corrected. In effect, this is the 'final examination.'

"However, it is recognized that satisfactory performance of a unit depends, at least in part, on factors other than the mechanical operation. For this reason, each class is given a refresher course in calculating heat gain, proper sizing of duct systems, and application of the cooling coils."

Training classes are being held in the new training facility of the general offices of Bryant at 2020 Montcalm St., Indianapolis. A new class is enrolled each Monday.

Applications should be made in writing to the Service & Application Dept. at least a week before the class begins. Applicants should indicate a first and second choice of dates in the event the desired class is filled.

FINANCES are always important, so the newly-elected officers of the Heating and Air Conditioning Research and Development Association, with headquarters in Raleigh, N. C., pay close attention to D. S. Shepherd, Jr. (right), treasurer. Left to right are Howard Shannon; W. H. Fowler, president; M. J. Zett, retiring president; and Dr. E. A. Falls, executive secretary. Not in picture is Frank Daddario, vice president.

Gibson Set with 'Beat the Tax' Room Unit Drive

CHICAGO—Preparing for the day the Internal Revenue Service makes its expected announcement that all room air conditioners, regardless of size, will be subject to Federal excise tax, Gibson Refrigerator Co. is supplying its dealers with advertising banners and mats proclaiming "Beat the Tax — Beat the Heat — Buy Gibson."

This was announced at a recent national sales meeting here where a new 2-hp. room air conditioner was introduced. Called the 1960 Super 60, it will be available to dealers June 1 and will carry a list price of $299.99.

The unit features a new aluminum filter and has an ARI-rated capacity of 22,000 B.t.u.h. It operates on 230 volts, 12 amps.

'Feeling Is Believing'

Fedders Offers Plastic Booths To Demonstrate Room Unit Effect

CHICAGO — Admiral Corp. says it believes that "feeling, as well as seeing, is believing."

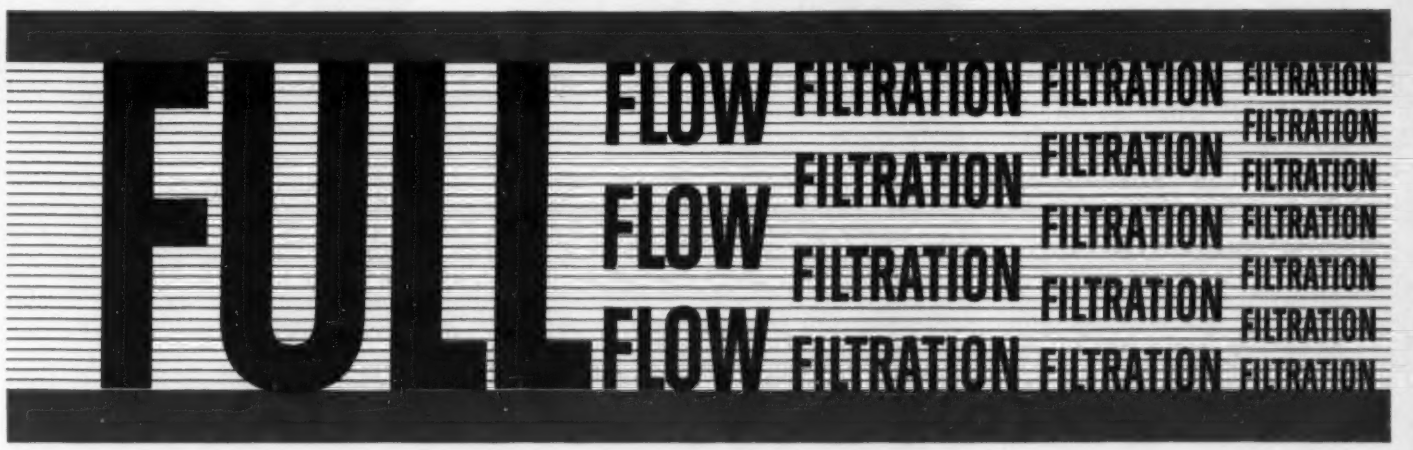
The manufacturer, in time for the peak season of air conditioner sales, is providing to retailers, through the company's distributors, compact plastic demonstration booths, it was announced.

"Consumers dripping with discomfort on the first hot early summer days will be exposed directly to air conditioning's benefits upon stepping into the miniature plastic 'rooms,'" the company said.

"The booth may be set up in any type of retail outlet in a short time, and is so designed that an operating Admiral air conditioner may be inserted into one 'wall' and allowed to run constantly to demonstrate its cooling capacity."

For full-flow filtration *plus* the lowest dew point you require—specify Davison PA-400.

For filtration of very low micron-sized contaminants plus moisture reduction to less than 10 ppm in seconds—specify Davison PA-400.



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For the same high no-bypass filtering efficiency achieved in the food industry with granular beds, plus a desiccant that cannot soften, swell or disintegrate—specify Davison PA-400.

In fact, for the highest filtering efficiency plus the best drying action you can buy—insist on Davison PA-400 in your dehydrators. Write Dept. 2525 for full information and technical bulletin.

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DAVISON CHEMICAL DIVISION
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Amana Names Two Central Cooling Line Distributors

AMANA, Iowa—Two distributors—one for eastern Ohio and the other for the Oklahoma City area—have been appointed by Amana Refrigeration, Inc. to handle its central air conditioning products.

Walter Wendler, Amana vice president in charge of sales, said the appointments were in line with the firm's expanding central air conditioning production, for which distributors with the special facilities needed for heat pump and central air conditioning installation are being sought.

Wendler said the Oklahoma City area has been assigned to Topco, Inc. in that city. Amana's other lines of freezers, freezers-plus-refrigerators, dehumidifiers, and room air conditioners will continue to be handled by Appliance Distributors, Inc. in that area.

The eastern Ohio area, taking in 16 counties, will be serviced by Ohio Heating & Air Conditioning Co. of Cleveland. Other Amana lines will continue to be handled by Tecca Distributing Co., Cleveland.

Frigidaire Sells 100,000 Frost-Proof Units In First Year

DAYTON—Frigidaire Div. of General Motors Corp. has announced the production and sale of more than 100,000 "Frost-Proof" refrigerator-freezer combinations.

The "milestone" was noted by Herman F. Lehman, GM vice president and head of Frigidaire, one year after the firm announced development of the Frost-Proof system.

Frigidaire recently introduced two Frost-Proof food freezers—16-cu. ft. freezers "in which no frost ever forms."

Lehman said that "Today about 80% of the top of the line refrigerator-freezer combinations we sell have the Frost-Proof feature, and we expect this same convenience feature to boost sales of upright food freezers."

4 Die In Lec Plane

BOGNOR REGIS, England—All three passengers and the pilot were killed when the recently acquired twin-engined "flying showroom" of Lec Refrigeration, Ltd. here crashed in Cardiff May 6.

Dead were Paul Chambers, a staff pilot; Kenneth Woodfield, Lec's West of England sales representative; R. L. Burchell, managing director of Lec's Cardiff agents, and Ronald Ashton, a television engineer.

Electric Heat Sales Up

SPOKANE, Wash. — Electric heat sales in the Inland Empire for the first quarter of 1959 were 26% ahead of the same period last year, according to Washington Water Power Co. March sales of 91 installations brought the total to 321.

Bohn Expects Improved Second Quarter Net

DETROIT — Second-quarter results of Bohn Aluminum & Brass Corp. will be as good as and maybe better than first-quarter results, Simon D. Den Uyl, chairman, said at the annual meeting.

In the first quarter of this year, Bohn earned $408,984, or 86 cents a share, on net sales of $10,620,187, compared with net earnings of $52,617, equal to 11 cents a share, on sales of $8,488,816 in the first 1958 quarter.

Shareholders approved an employe stock option plan.

Frozen Marrow Speeds Recovery Of Patients Exposed to Radiation

LOS ANGELES — Refrigeration is the means of restoring health to those injured by radiation, according to Dr. Nathaniel B. Kurnick who described studies at Long Beach Veterans Administration hospital.

Bone marrow is very sensitive to radiation. Its exposure to strong radiation results in depression of blood building activity, one of the most critical radiation hazards.

Kurnick said live bone marrow slowly frozen in glycerol and maintained at low temperatures with dry ice could be kept for long periods, perhaps indefinitely.

The Long Beach studies involved collection, freezing, and storage of bone marrow from patients who were to receive extensive radiation treatment for cancer.

In three such patients reinfused intravenously with their own marrow no adverse reactions were noted. The group demonstrated rapid repopulation of radiation-depressed bone marrow and recovery. Radiotherapy patients untreated with bone marrow recovered much more slowly in this respect.

Bone marrow banks for the general population in case of atomic war have been suggested, Kurnick said.

Opens Richmond Office

PITTSBURGH—A. M. Byers Co. has announced the opening of a new sales office in Richmond, Va.

Heading up the new office, located at 1-D East Grace St., is Douglas F. Williams, a field service engineer previously assigned to the company's Boston office.

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Solve your motor problems with

You can make your job easier with Century Electric's complete line of fractional-horsepower motors. Here's how:

Easy ordering—You save time because you get answers to all motor problems from one source. This means you don't have to shop around for the motor you need. You name it—capacitor, jet pump, unit heater, oil burner, brake, gear—any one you want, and in all types of enclosures too.

Fast shipments—From Century Electric's complete stock you can get a motor for any standard application. In addition, motors are packed in sturdy boxes so if you reship you know they'll arrive in good condition.

Arizona Governor Visits York Cavalcade

GOVERNOR Bill Fannin, right, of Arizona, offers congratulations after visiting the York Calvalcade of Products during its Phoenix stop-over. Left to right are: Alfred Maggs, president of Arizona-York Refrigeration Co. in Phoenix; Roy C. Ingersoll, chairman of the board, Borg-Warner Corp., Chicago; and C. J. Schurman, general sales manager, engineered machinery, York Div. of Borg-Warner, York, Pa. The Cavalcade visited 17 cities in a coast-to-coast tour that took 82 days and covered approximately 15,000 miles. In addition to distinguished visitors such as Governor Fannin, an estimated 6,000 architects, consultants, engineers, and builders saw the new product introductions.

First Quarter New Construction Up 12% Over 1958, Architectural Forum Finds

NEW YORK CITY — Total spending for new construction in the first quarter of 1959, a record $10 billion, showed a 12% increase over the same period last year, *Architectural Forum* reported.

The magazine said $3.4 billion was spent in the first quarter for new dwelling units, a jump of 32% over the first quarter of 1958.

And new homes were being started at a seasonally adjusted rate of 1,390,000 per year in March.

However, reported *Forum*, private non-residential construction actually trailed last year's first quarter by $207 million, or about 5%.

The drop in non-residential activity is attributable to the continuing slump in industrial building (down 34% in the first quarter) and office building (down 9%).

Forum said that industrial building is expected to recover later in the year, but office construction will probably continue its slide and end with its first minus year since 1952.

Other areas of private non-residential building that showed minus signs in the first quarter were hospital building (down 6%) and the building of telephone and telegraph facilities (down 14%).

Running counter to the generally downward trend of non-residential building, said *Forum*, is the construction of stores, restaurants, and garages. After two years of decline, store building shows a rise of 16% for the first quarter of 1959, an increase largely due to shopping center construction.

In the booming area of public building (up 16% in the first quarter to a record of $3.1 billion), there is only one worrisome spot, according to *Forum* —school building. School building dropped slightly from last year's first quarter.

Owens-Corning Names 5 Vice Presidents

TOLEDO — Owens-Corning Fiberglas Corp. has named five vice presidents in a realignment of its marketing organization recently announced by Harold Boeschenstein, president.

John W. Trimble was named vice president-sales branch operations with offices in Toledo.

D. W. Ladd, Jr., was name vice president-eastern region with offices in New York. He will be responsible for sales operations in the New England states, New York, eastern Pennsylvania, Delaware, and Maryland.

W. W. Boeschenstein was named vice president-central region with headquarters in Detroit. He will be responsible for Fiberglas sales operations in Michigan, Ohio, Indiana, western Pennsylvania, and Kentucky.

R. E. Brown was named vice president-mid-continent region with offices in Kansas City, Kan. He will be responsible for sales operations in the 15 midwestern and southwestern states.

The regional vice presidents will report to Trimble.

William J. Clark, formerly sales manager of the Textile Products Div., was named vice president-advertising, succeeding W. D. Crelley, who will continue as consultant and advisor to Clark and the marketing director in the area of advertising and merchandising planning.

Trimble has been an executive on the general sales staff. Ladd was named eastern regional sales manager in February, 1959.

Boeschenstein was appointed Great Lakes regional sales manager in 1958. Brown has been mid-continent regional sales manager since 1957.

James A. Lee Dies

DETROIT—James A. Lee, 57, director of procurement for the automotive division of American Motors Corp., died of a heart attack recently.

From 1936 to 1941 he served as air conditioning engineer, commercial division regional manager, and contract sales manager for Nash-Kelvinator Corp. in Baltimore and Detroit, it was noted.

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Application know-how—You want to be sure you have the *right* motor for the job. And if you need expert help, you can get it from your nearest Century Electric sales engineer. He knows motors inside and out because he sells, applies and thinks motors day after day.

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Revised NWAHACA Standards Clarify Procedure for Installing Perimeter Warm Air System In Concrete Slab

CLEVELAND — Revised standards to clarify the "how to" of installing a perimeter warm air system in a concrete slab have been issued by the National Warm Air Heating & Air Conditioning Association in its continuing research-information program.

The new material, contained in the association's Manual 4, Sixth Edition (1959), provides five type classifications of ducting material to be used in concrete slab construction, details accepted design methods, and lists proper installation requirements. Manual 4 is entitled "Warm Air Perimeter Heating as Applied to Structures With or Without Basements."

Slab embedded ducting has been classified in two different ways by the association. First by its physical and chemical reaction to concrete; and then, according to installation specifications dealing with the minimum number of inches of concrete surrounding the duct, corrosive conditions, strength, and combustibility.

The new section of the manual says that a minimum thickness of 2½ in. of concrete shall be above all ducting buried in a concrete slab.

Concrete thickness surrounding ducts on all other sides, except the top, shall be a minimum of 2 in. for Types 1 through 4, while Type 5 need not be encased in concrete.

Strength of the ducting for the metal, ceramic and asbestos-cement types (Type 1, 2, 4, and 5) shall be the equivalent of 26-gauge, galvanized steel, round duct of 8 in. diameter.

Strength of Type 3, laminated paper or other organic fiber, must meet the requirements set forth by FHA in its "Criteria and Test Procedures for Combustible Materials Used for Warm Air Ducts Encased in Concrete Slab Floors."

Also, Type 3, the association says, should not be used within 2 ft. of the furnace supply plenum or vertical riser or register.

Type 1, galvanized sheet metal, must be coated on the outside with asphalt or bituminous coating complying with Federal Specification SS-A-701.

Physical and chemical breakdown is predicted on following:

1. Will the ducting float or sink when concrete is being poured.
2. Is the ducting material free or prone to corrosion from concrete.
3. Will the material burn or is it non-combustible.
4. Is the material subject to moisture absorption.

The association states in the new section 7 of Manual No. 4 that the classification numbers were arbitrarily chosen and do not indicate in any way the degree of acceptability of the various types. The five types are:

TYPE 1. Ducting that floats, is subject to corrosion by concrete and is non-combustible. An example of this material is galvanized sheet metal.

TYPE 2. Ducts that float, is not subject to corrosion by concrete, and is non-combustible. An example of this material would be stainless steel.

TYPE 3. Ducting that floats, is subject to moisture absorption, and is combustible. An example is laminated paper or other organic fiber.

TYPE 4. Ducting not subject to corrosion or floating, is non-combustible but will absorb moisture. Examples of this are ceramic pipe which is non-glazed and/or unvitrified and concrete pipe.

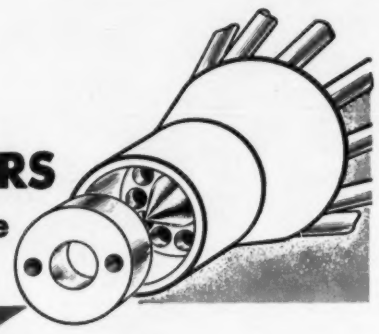
TYPE 5. Ducting not subject to corrosion, floating, moisture, and is non-combustible. Examples of this are asbestos-cement pipe and ceramic pipe which is both vitrified and glazed.

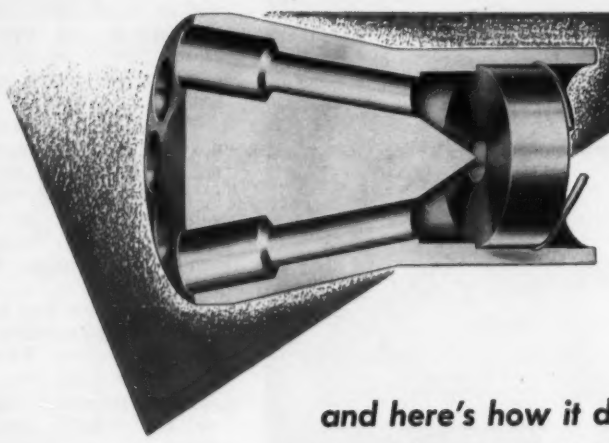
Copies of Manual 4 are available at $1.75 per copy from the association's national office, 640 Engineers building, Cleveland 14, Ohio.

Sporlan

REFRIGERANT DISTRIBUTORS

with the Versatile Interchangeable Nozzle





give controlled distribution to every circuit... every time!

and here's how it does it!

The velocity of the liquid-vapor mixture of the refrigerant is increased by the flow through the nozzle orifice. Also the turbulence created by the pressure drop causes a homogenous mixture of the liquid and vapor. This refrigerant mixture, while still at high velocity, is then immediately deflected by the conical button and fed equally to each circuit.

in addition ... the versatile interchangeable nozzle affords custom selection for any refrigerant or capacity. Coils can be stocked with distributors already attached and proper capacity nozzles can be selected either before delivery or on the job.

The removable nozzle simplifies visual, air, or test wire inspection at coil and distributor connections.

Final coil and distributor leak test made easy prior to valve installation.

Get controlled distribution to every circuit, every time ... buy Sporlan Refrigerant Distributors with the Versatile Interchangeable Nozzle for Peak Performance on all direct expansion multi-circuit evaporators, regardless of load or temperature. Better still, buy Sporlan Right Down the Line and get Peak Peformance throughout!

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Dravo Announces Nationwide Plan For Leasing

PITTSBURGH—Dravo Corp. has announced a nationwide leasing plan for its line of industrial and commercial space heaters and other equipment.

The plan, operated in conjunction with the United States Leasing Corp. of San Francisco, makes it possible for business firms to acquire needed equipment for base lease periods ranging from 3 to 7 years.

At the expiration of this period, Dravo said, the lease may be renewed annually at low cost for as long as desired, or outright purchase of equipment or trade-in on newer items can be arranged.

The arrangement with the San Francisco firm enables Dravo's customers, if they so desire, to obtain such items as "Counterflo" and "Paraflo" warm air space heaters on a "pay as you go" basis; thus freeing working capital for other uses, the company pointed out.

OHI Admits 3 New Chapters, 7 Associates

SEATTLE—At the 37th annual convention of the Oil Heat Institute of America, Inc., held here recently, three new chapters (including one in Great Britain) and seven firms and organizations were admitted to chapter and associate membership in the OHI's Distribution Div.

The new chapters are: Oil Heat Institute of Great Britain, Wiltshire, England; Michiana Oil Heat Institute, Inc., South Bend, Ind.; and the Oil Heat Institute of North East Indiana, Fort Wayne.

Associate members admitted are: The National Oil Jobbers Council, Washington, D. C.; The Sun Oil Co., Philadelphia; Marrows Oil Service, Tennessee; Rummel Heating, Inc., Mt. Clemens, Mich.; H. H. Palmer, West Chester, Pa.; S. W. Rawls, Inc., Franklin, Va.; and Charles R. Rapiport Associates, Jersey City, N. J.

Air Conditioning Costing Only 15% of Total Building Cost Features Flexibility

MILWAUKEE—In air conditioning the five-story Equitable Life Assurance Society building, a completely flexible system was necessary because the building was built without knowing the requirements of future tenants. The system designed not only achieved this extreme flexibility, but its original cost was only $2.19 per sq. ft. of building area.

The design of the system was limited by the following considerations:

1) The building was being built as an investment and therefore initial cost had to be kept low enough to insure a proper return.

2) As a whole, the structure had to attract prospective tenants by offering them the ultimate in a modern office building.

3) Architecturally, the building is almost square in shape with glass on the north, east, and south exposures. As a result, the system had to provide heating on one exposure and cooling on the others simultaneously.

4) Inner offices had to be arranged for cooling all year around.

Architectural flexibility was provided by planning on a 4 ft. 4 in. module which enabled the smallest future office space to be 8 ft. 8 in. and enlarged by increments of 4 ft. 4 in.

The electrical fixture layout was based on this same module, using a 4-ft. fixture with 4-in. spacer between each fixture to allow for the placing of a partition.

Air conditioning system flexibility was obtained by using Trane fan-coil "UniTrane" individual room air conditioners around the north, east, and south perimeters.

A UniTrane unit was installed in every other modular space to assure at least one unit in each private office. Room thermostats were installed after tenant requirements were known.

Piping to the UniTrane units was arranged so that varying water temperatures could be provided to the units serving different exposures. A separate three-way valve with automatic changeover valves and an outdoor bulb serves the units on the north, east, and south exposures.

Outside air is not delivered to the perimeter units through the wall at each unit because of architectural considerations. Outside air for these units is supplied by a Trane "Climate Changer" air handling unit in a roof penthouse. One hundred per cent outside air is introduced at the air handling unit, tempered and delivered through perforated ceilings in the perimeter space.

Inner office areas are handled exclusively by Climate Changers with booster coils for zoning. Air is distributed through perforated ceilings from the Climate Changers which are located in the basement and the penthouse. The supply and exhaust system was arranged to take in and relieve 100% outside air for cooling purposes.

Chilled water for cooling is provided by a 150-hp. Trane "CenTraVac" hermetic centrifugal compressor installed in the basement equipment room.

The cost of the complete air conditioning system amounted to 15% of the cost of the building.

The Equitable Life Assurance Society building was designed by the office of von Grossman, architects, Eugene E. Leucht, partner-in-charge.

The air conditioning system was planned and designed by Lofte & Fredericksen, consulting engineer. It was installed by Wenzel & Henoch Engineering Co. All are located in Milwaukee.

Drayer-Hanson Reports Highest Traffic In 49-Year History

LOS ANGELES — Drayer-Hanson concluded the last 30 days of its 1958-59 fiscal year, ended March 31, by racking up record commercial air conditioning shipments from the Los Angeles plant — the highest traffic in the 49-year history of the firm.

General Manager H. T. Hunt, said these shipments were up 34.8% over the previous high figure a year ago.

Other volume records were chalked up during fiscal '58-'59, Hunt has indicated, including gross sales and profits — also record setters for the West Coast manufacturer, a division of National-U.S. Radiator Corp.

Memorial Auditorium In Greenville, S. C. Has Airtemp Equipment

GREENVILLE, S. C. — Air conditioning by Airtemp Div. of Chrysler Corp. will cool the new Memorial Auditorium here.

The equipment installed includes a 500-ton centrifugal unit with a 400-hp. motor.

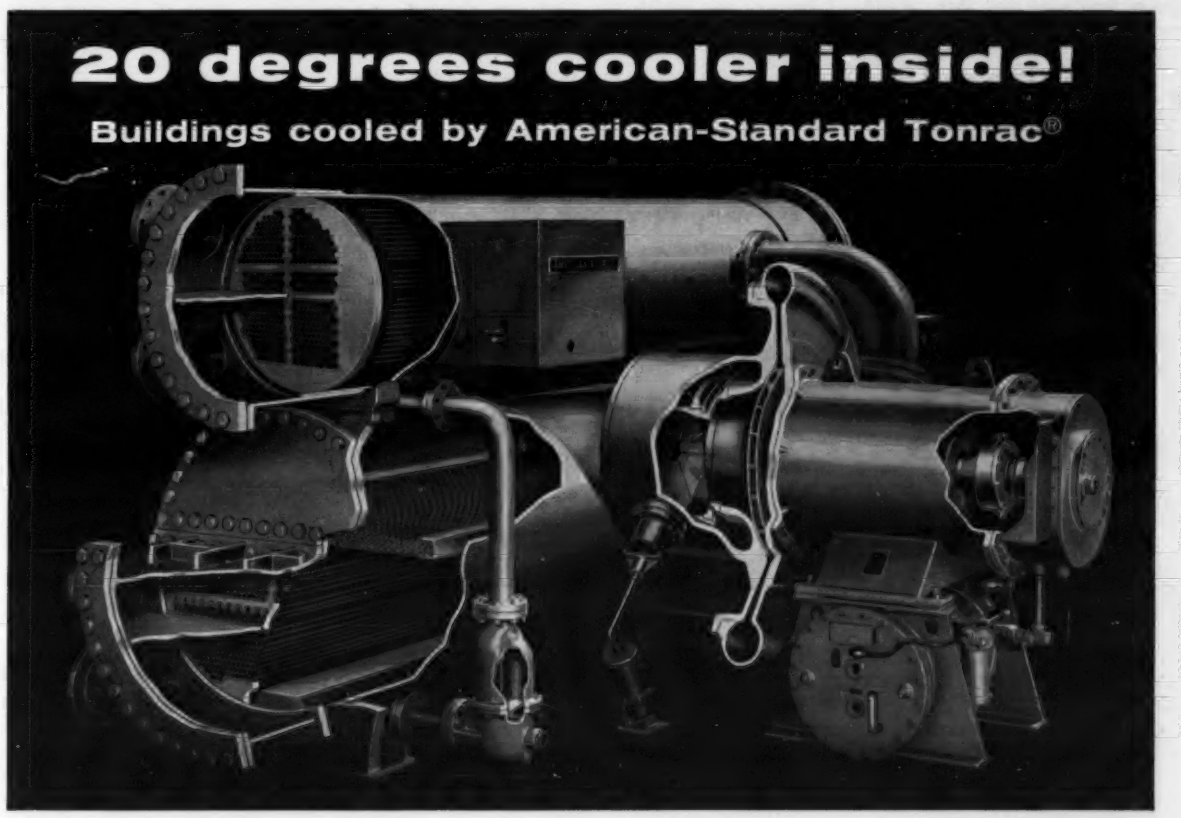
The 7,000-seat building was dedicated May 17. Cunningham and Walker, AIA, of Greenville, was the architect; F. Harold Gillespie and Associates of Greenville was the consulting engineer; and Southern Comfort of Charlotte, N. C., Inc., was the mechanical contractor.

Pyle-National Elects Voelkner, Feustel

CHICAGO—Election of Alvin G. Voelkner and George H. Feustel as vice presidents of The Pyle-National Co. has been announced by William C. Croft, president.

Voelkner, a veteran of 30 years with Pyle-National, is in charge of the company's engineering activities. Feustel, who has been with the company for 17 years, directs all manufacturing operations.

NEWS readers are invited to write to the editor giving their opinions on any subject of interest to the industry.



WOLVERINE TRUFIN® SAVES SPACE

provides more heat transfer surface

No finer proof of the space saving and heat transfer abilities of Wolverine Trufin Type S/T—the integrally-finned condenser tube—can be found than in its use by American-Standard Industrial Division, Detroit, Michigan.

American-Standard uses Trufin Type S/T in the evaporator and condenser tube bundles of Tonrac—its completely self-contained, hermetic, centrifugal, refrigerating machine. This single-level unit is widely-used to supply chilled water for air conditioning systems in public buildings, offices and industrial plants.

Wolverine Trufin Type S/T is of great value here, because its extended surface has approximately 2½ times as much outside surface area as ordinary, plain condenser tube. In units such as Tonrac this enables the manufacturer to pack greater heat transfer capacity into a given area thus reducing overall unit size.

If heat transfer efficiency is important to your company why not follow American-Standard's lead and specify Wolverine Trufin Type S/T for shell and tube condenser use. Write for more information or ask for the services of a highly-trained Wolverine Sales Representative.

Wolverine Trufin is available in Canada through the Unifin Tube Division, London, Ontario.

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Heat Pump Is 'Bright Spot'—Giordano--

(Concluded from Page 1, Col. 4)

Dixon line "no longer means anything in the heat pump business," Giordano continued: "This past summer, for example, Commonwealth Edison, the Chicago electric utility, realized that the only way they could ever build up their winter load was to encourage the use of electric heating.

"They did this by establishing a preferential heating rate of 1¾ cents per kilowatt hour. I know this doesn't sound particularly impressive to you in the PGE area where 9 mills is the standard, but it is rather significant where the rate had been 2½ cents per kilowatt hour.

"Only a few days after the announcement by Commonwealth, we signed with a builder to provide him with 102 Fedders 'Adaptomatic' heat pumps for the three-bedroom, $21,500 house.

"Actually, this builder hadn't originally designed the house for the heat pump, but when he was informed of the new electric rate, he realized the value of offering this modern method of heating and cooling equipment in his homes. They are being built now."

Even Consumers Are Aware of Advantages

Even the consumer is aware of the advantages of heat pump living, the Fedders executive asserted. To illustrate this point, he cited a development in Lima, Ohio.

"A builder there had a project of 30 homes. The central heat pump was offered as a standard feature for which the buyer had to pay nothing additional. If the buyer did not want the heat pump, the builder subtracted $1,100 from the price of the house.

"Believe it or not, 27 of those 30 homes were sold with the heat pump. This was in Ohio."

Turning to the Portland market, Giordano told his audience of engineers, builders, contractors, architects, and others: "I think it may come as a surprise to some of you that Portland is the ninth largest market for central heat pumps in the entire country.

"I think it particularly noteworthy since this area is not generally thought of as 'heat pump' country.

"Our industry figures show that Portland accounts for 18% of all the central heat pumps that are shipped in the United States. Of every 100 units, 18 come right into this city. Despite what many may think, Miami is only a 22% market.

"I'm also very proud to announce that the Refrigerative Supply Co., our Portland distributor managed by Bill Heiber, is one of Fedders largest heat pump distributors in the country."

Cites Jobs in Portland

Discussing next "some of the jobs we have right here in Portland," Giordano cited Merchant's Delivery Co. where a 3-hp. unit heats and cools its general office area; the Tico-Taco night club, where two units serve the public area; and local airlines offices.

Regarding the airlines jobs, he mentioned that there's a heat pump in the penthouse of the Western Airlines office, in the main office of United Airlines, and in the administrative office of Skyway Airport itself.

"Each of the four offices of Northwest Marine has a central heat pump," he continued. "Many of you who travel have undoubtedly seen the motel in Medford that is using nine of our 3-hp. heat pumps.

Hotels Seen as Big Customer

"The motel industry, incidentally, is becoming a very big customer for the heat pump—particularly for the individual room units where one traveller can turn his heat pump on cooling while another might want to use it for heating—at the same time."

Giordano also referred to an installation in a Seattle union building. Six units were installed on the roof, he pointed out, with the result that a boiler maintenance man, required by Seattle ordinance when a boiler is in use, could be given other duties.

Noting that most of the installations in the Portland area have been in commercial establishments, Giordano commented that "If we think back to the beginning of air conditioning itself, this was the pattern.

"The movie houses were usually the first air conditioned buildings in town. Now about 90% of all movies are air conditioned.

"Then came the restaurants, stores, and other businesses. Then, and only after the public became aware of what it was, did the air conditioner become important in the home.

"In Portland, the same pattern is being followed with the heat pump. First the businesses, and now units are being installed in private residences. . . .

Portland First Market To Accept Heat Pump As Heating Appliance

"The most peculiar element involved, however, is that Portland is the first market to accept the heat pump as a heating appliance rather than a cooling appliance. . . . We are, for the first time, making a new market for air conditioning by offering a heating appliance that has the added function of cooling.

"For this reason, Portland is being watched very closely by the heat pump industry. This area may well be the largest heat pump market in just a few short years."

Calls Attention To Room Heat Pumps

Giordano then called attention to another phase of the heat pump business—the room heat pump. "Don't underestimate this unit," he advised. "That appliance, I feel, is the key to the success of the central heat pump."

He said it was the window unit that made air conditioning as popular as it is today, "and it will be this same window unit, now as a heat pump, that will popularize the whole heat pump concept."

The year-round room heat pump, it is said, is ideal for installation in rooms that are added to existing homes, for newly-finished attics or basement rooms, for hard-to-heat rooms, and in any situation that previously required the extension of the existing heating system.

He cited one motel installa-

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Built-in flexibility makes the Lau "Series A" the number one choice for commercial and industrial installations. With a C.F.M. range of from 8,000 to 36,000, this efficient unit may be used in many different sizes and types of air conditioning systems. For even greater C.F.M. capacity and flexibility the "Series A" may be operated in banks of two or three.
The "Series A" features such quality Lau parts as heavy gauge riveted wheels, large reservoir oil type bearings and sturdy angle framing for housing supports and structural strength. "Series A" blowers provide for either top or rear mounting motor.
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Cooling Towers
Remote Condensers

tion on Long Island. There, he said, the operator installed one unit in each of his 65 rooms where they are the only source of heating.

The room heat pump is for the Portland area, too, Giordano declared. In 1958, he said, 60% of the room units sold by Refrigerative Supply were heat pump models.

Pointing out that the industry last year shipped about 20,000 central heat pumps, Giordano stressed that this was 157% greater than the previous year "at a time when the entire air conditioning industry, room units and central systems, just about broke even.

Central Unit Shipments 260% Ahead of 1958

"For the first three months of this year, central heat pumps are running 260% greater than last year. . . . So, while the central heat pump, in terms of unit volume, may still be small, it is the brightest product in the entire industry."

The fact that many utilities around the country are creating preferential rates for this type of heating "is proof that this element of our business — the power suppliers — are convinced of the necessity and desirability of electric heating and cooling," he stated.

Continuing, Giordano stressed to his audience: "You, sitting here, are designing the houses, building them, wiring them, heating them, and supplying the power for them. You must take up the responsibility of bringing the heat pump message to your customers."

In addition to the new-home market, the Fedders president said, the modernization market "also has vast potential and once these heat pumps start cropping up in new homes, owners of older homes will want to 'keep up with the Jones.' "

Paul Komroff Promoted by Emerson Radio

JERSEY CITY, N. J.—Paul Komroff has been advanced to vice president in charge of air conditioning engineering for the Consumer Products Div. of Emerson Radio & Phonograph Corp., it was announced by Benjamin Abrams, president.

Komroff

Komroff has been with Emerson since Quiet-Heet Corp. became its subsidiary and manufactured "Quiet Kool" air conditioners for the parent company. Prior to this time, he had been in charge of engineering for Quiet-Heet, having joined there in 1948.

"He is responsible for a number of innovations and design trends in the air conditioning industry and has had a number of patents issued to him," the announcement said. "His most recent design is the 'Kool-Mount' feature incorporated in the 1959 Quiet Kool line of air conditioners."

Komroff is a senior member of ASHRAE.

CORRECTION

The name of R. C. Westover, Jr., president, Ray Oil Burner Co., San Francisco, was inadvertently omitted from the list of newly-elected members of the Executive Committee of the Oil Heat Institute of America, Inc., as reported in the May 11 issue of the NEWS.

ASHRAE Chapter Elects

BUFFALO — Donald Seifert was elected president of the American Society of Heating, Refrigerating & Air-Conditioning Engineers chapter at a meeting in the University Club.

Other officers are Albert Little, executive vice president; Frank Collins, first vice president; Richard Bartsch, second vice president; Herbert McLaughlin, secretary; and Arthur Warden, treasurer.

Mathes Outlines Benefits Gained from Recent Merger Involving List Industries

FORT WORTH, Texas — The Mathes Co., manufacturer of air conditioners and heat pumps, "will enjoy substantial benefits" as a result of the recent merger of List Industries Corp. into the Glen Alden Corp., according to Benjamin R. Ebersman, Mathes president.

Mathes was a division of the old Glen Alden Corp.

"One of the key benefits is added financial strength," Ebersman said. "We feel the merger will make possible increased activity at Mathes in the field of research and development, as well as future installation of new equipment to increase our capacity and productivity."

Ebersman is vice president of the merged Glen Alden Corp. as well as president of its Mathes Div.

The merged company, with total assets of $132 million, includes in addition to the Mathes Div., the Glen Alden Coal Corp., producer of anthracite coal; RKO Theatres, Inc.; USF-Aspinook Finishing Div., finisher of textile fabrics; E. Hubschman & Sons Div., tanner of calf leather; Aluminum Industries, Inc., and its Triplex of America Div., manufacturer of aluminum parts for the automotive and other industries; Otis Railway Warehouses Div.; and crude oil and natural gas properties in Kansas and mining exploration in Canada.

Ebersman said that if the merger had been in effect on Jan. 1, 1959, corporate earnings for the first quarter of 1959 would have been $2,222,738 before taxes on income and special items.

The former Glen Alden Corp. had a tax loss carry-forward of $9,800,000 as of Jan. 1 of this year.

As a result, the earnings of the new company will not be subject to Federal income taxes until the tax loss carry-forward is consumed.

In 1958, List Industries Corp. earned $3,277,765 after taxes on sales and operating revenues of $47,703,200. The former Glen Alden Corp., in 1958, had a consolidated net loss of $86,543 on sales of $54,665,772.

George A. Horne Dies

PLAINFIELD, N. J.—George A. Horne, a former vice president and chief engineer of Merchants Refrigerating Co., New York City, died recently in Paul Kimball hospital, Lakewood.

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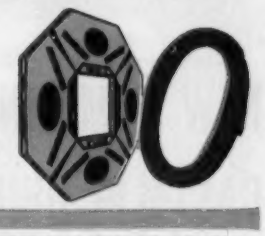

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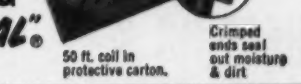

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A line of heat transfer tubing made by Readi-Fin Mfg. Co., Inc. (a subsidiary of Reading Tube Corp., at Reading, Pa.). The extended surface is extruded from the tube wall, thus eliminating the possibility of fin failures resulting from thermal shock, corrosion and erosion. This "one-piece" (integral) construction provides maximum heat transfer efficiency, ruggedness, easy fabrication and freedom from fouling. It's available in Water Tube types with finned or plain ends and in Condenser Tube types with finned, plain or stripped ends.

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DALLAS, TEXAS—9000 Sovereign Row, Brook Hollow Industrial District

Honeywell Lists 31 Cities Participating In Its 'Operation Heat Wave' Campaign

MINNEAPOLIS — More details on how its "Operation Heat Wave" will help residential air conditioning contractors get off to a good start next month were revealed recently by Minneapolis-Honeywell Regulator Co. here.

On the first day after June 1 on which the temperature rises above 84° F. in each of 31 selected cities (or some equally uncomfortable temperature selected by local dealers), the controls manufacturer will run a half-page newspaper advertisement offering consumers a "Free $31.85 head start to air conditioned comfort."

The advertisement will offer homeowners a free air conditioning survey, free thermometer, free filter flag (when they buy central air conditioning), and free air conditioning booklet, if they act before July 10.

Cooperating air conditioning contractors will get a free listing in the advertisement. They are also urged to tie in with their own advertising on the same page.

The 31 cities where "Operation Heat Wave" will be conducted are Atlanta; Baltimore; Birmingham, Ala.; Chicago; Cincinnati; Columbus, Ohio; Dallas; Detroit; Fort Worth; Houston; Indianapolis; Jacksonvill, Fla.; Kansas City, Mo.; Little Rock, Ark.; Los Angeles; Louisville, Ky.; Memphis, Tenn.; Miami; New Orleans; New York City; Oklahoma City; Omaha; Philadelphia; Phoenix, Ariz.; Pittsburgh; Richmond, Va.; St. Louis; San Antonio; Tulsa, Okla.; Washington, D. C.; and Wichita, Kan.

Forty-two newspapers are scheduled to carry the advertisement.

Minneapolis - Honeywell is carrying the program to dealers through local wholesalers. Participating dealers will be supplied with proofs of the advertisement, copies of the consumer booklet "Milady's Climate," window and wall banners, consumer mailing folders, and other materials.

Operation Heat Wave is one of three major promotional campaigns being conducted by Minneapolis-Honeywell. The others are a long-range educational program to acquaint housewives with the advantages of central year-round air conditioning, and an advertising and sales promotional program to promote the concept of two heating systems in the home.

'Milady's Climate' Drive Set To Sell Ladies

The program designed to sell residential air conditioning to housewives is called "Milady's Climate."

It is built around a new, 18-minute color movie which Honeywell has produced specifically to tell the story of air conditioning to housewives and a new 12-page booklet that tells women about the benefits of air conditioning.

The program was developed through the cooperation of the Home Service Committee of Edison Electric Institute, the Air Conditioning Promotion Committee of the American Gas Association, and the Distribution Div. of the Oil Heat Institute.

The booklet is entitled "Milady's Climate." It tells the housewife about the comfort, improved health, cleanliness, and economy that year-round air conditioning can bring to her home. The key theme is home maintenance.

The movie is called "Mother Knows Best" and it is entertaining as well as informative. Primary use of the film will be made by organized industry groups who already have established means of reaching large consumer groups.

In addition, Honeywell will make the film available on a loan or sales basis to anyone in the industry. Prints of the film will be available on a free-loan basis at each of 29 Honeywell training aid stations throughout the country. Both trade groups and manufacturers, if they desire, can add a trailer to the film to carry their own message.

2-Heating System Drive

The two-heating system program is directed at what Honeywell describes as the "most lucrative" part of the new home market—Americans in the mass middle income bracket who will purchase an estimated 250,000 homes this year.

Heart of the program is advertising scheduled for consumer, builder, and trade magazines. All advertising and sales promotion material has been prepared in two versions—one designed for use by the warm air section of the industry and the other for use in promoting two-zone hot water heating.

A 12-page booklet which tells the consumer why two-heating systems are advantageous also is available in two versions. The booklet is designed for distribution by dealers and builders to consumers. Two full pages—plus part of the back cover—have been reserved for manufacturers' messages.

Consumer advertising, Bissell said, will try to educate the homeowner to the fact that two heating systems mean better system performance, reduce costs, save space, give added system insurance, and increase the resale valve of his home. It also will capitalize on Americans' current fondness of two phones, two baths, two fireplaces, etc.

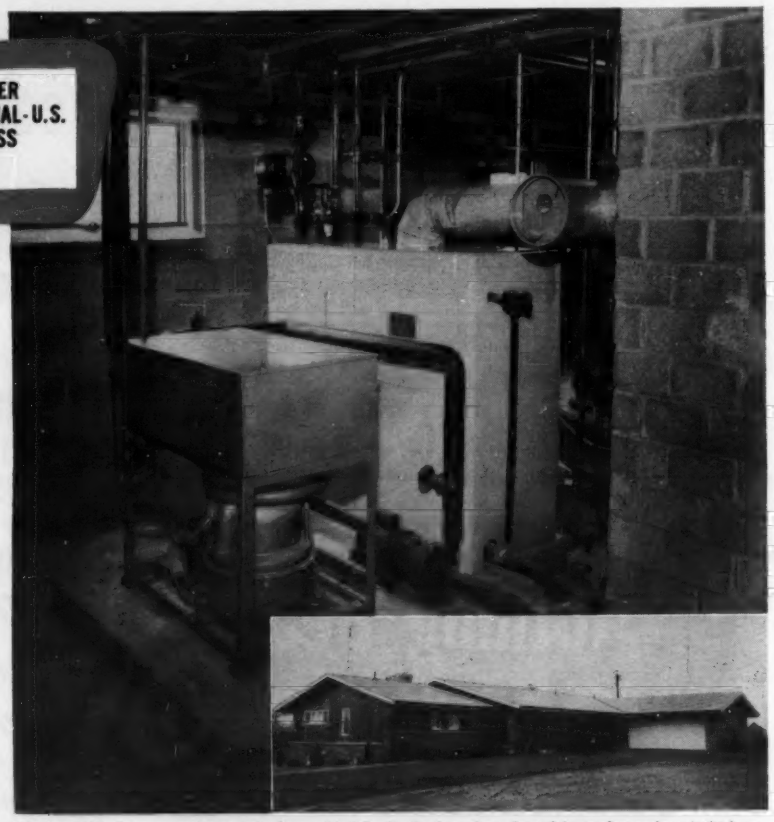
The consumer education program began with a two-page, two-color advertisement in the May issues of *House Beautiful* and *Better Homes & Gardens.* Additional full-page advertisements are scheduled in the June, September, and November issues of *House Beautiful* and in the July, September, and October issues of *Better Homes & Gardens.*

A two-page, two-color advertisement appears in May aimed at educating home builders to the value of twin heating systems as a selling feature for their homes. Followup advertising is planned for July, September, and November.

Also scheduled throughout the summer and fall is a major campaign in heating and air conditioning trade magazines.

ANOTHER NATIONAL-U.S. SUCCESS STORY

NEW HOME IN CASTALIA, OHIO HAS YEAR-ROUND COMFORT WITH HEATING & COOLING BY NATIONAL-U.S.



A National-U.S. 5 ton water chiller and a Sunray IV oil-fired boiler form the nucleus of the comfort package in the home of Elmer Borchardt's family in Castalia, Ohio.

All-Hydronic System Uses Variety of Distributing Units

Castalia, Ohio—The year-and-a-half old residence of Mr. & Mrs. Elmer Borchardt has just completed a full cycle of the 57 varieties of weather for which this area is noted, and it has proven to be fully up to the high standards that the Borchardts had set.

The fireplace is the focal point of interest, but the National-U.S. fan-coil unit, to its left, is the center of comfort.

Temperature regulation is not only for all seasons but is also regulated separately for different sections of the home. In addition the heating system anticipates indoor temperature changes by an outdoor thermostat that prepares the system for heavy assignments by automatically raising the boiler water temperature before it's needed.

Heat is supplied from an oil-fired Sunray IV unit—National-U.S.'s deluxe cast iron residential boiler. Cooling is from a 5 ton packaged water chiller, also supplied by National-U.S. Both hot and cold water are distributed to National-U.S. fan-coil units in each room, which can be used for heating or cooling, as needed.

Supplementary heating for breakfast room is provided by National-U.S. convectors. Note cooling grill near ceiling.

Supplementary heating is supplied to the more exposed areas by National-U.S. Fintube Convectors, and a recreation room in the basement has National-U.S. baseboard heating. The boiler is also connected to a National-U.S. Unit Heater which is used to keep the garage warm.

The entire hydronic system was installed by the Hazelback Plumbing & Heating Company of Bellevue, Ohio. "We've been installing National-U.S. equipment for years," the contractor reported, "And we appreciate the help we get from the company's field men. Mr. and Mrs. Borchardt have always gone to Florida every winter in order to get away from the weather we have up here, but they tell us that they have spent the most comfortable winter they've ever had, right here at home, this year. We like to have our customers tell us things like that. It helps when we come to sell the next job."

Contractor Wayne Hazelback explains to Mrs. Borchardt how the fan coil unit can distribute either cool air or warmth.

Full details on the equipment used in the Borchardt home are available to you. Consult the yellow pages of your phone book, or write to:

National-U.S. Radiator CORPORATION
HEATING AND AIR CONDITIONING DIVISION
Johnstown, Pennsylvania

Carrier Expands Management Course

SYRACUSE, N. Y.—Continuing its program of guidance to dealers in business practices, Carrier Corp. has developed a new expanded course in management fundamentals.

Taught by distributors, the course is a follow-up to the two-day seminars which were held for 1,150 dealers in late 1957 in 12 sections of the country, it is noted.

The new program differs in that it gives more individualized help to small groups of 20 or so and is taught by the distributor rather than by a team from the Syracuse headquarters of the company.

The program began last fall when Carrier field personnel and Sales Training Dept. taught the course to the distributor organization.

Each instructor is provided with course guides, agendas, slides, and other visual aids.

More than 2,000 sets of individual six-lesson packets have already been ordered by distributors and the first reports on completed sessions are now coming in.

Six subjects from the former two-day seminar curriculum were selected for treatment in intensive two and one-half hour sessions.

Topics are: Financial statement analysis, planning sales objectives, planning the budget, analyzing the budget, job cost control, and business safeguards. The latter includes information on credit management and insurance.

Dealers are asked to bring to each session certain facts and figures on their own business operation so they can plan a budget and analyze their own individual operations during the sessions.

Kenneth Vaughn, Carrier sales training director, and his assistant, Burdge Gates, put the course together based on the earlier seminar.

Distributor Sponsors Course for Competitors

CAMDEN, N. J.—The first distributor to try Carrier Corp.'s business management program was A. A. Duckett, Inc. of Camden.

Joseph Grenader, wholesale manager, was the instructor. He indicated dealers were enthusiastic about the course.

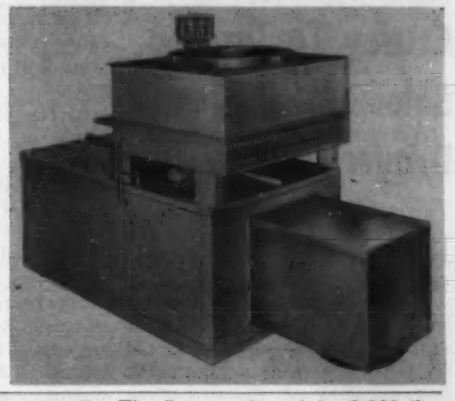
Grenader put on the same course for members of the Master Heating & Cooling Association of South New Jersey. Reaction reportedly was equally enthusiastic.

Asked why he provided instruction for an association which included many of his own competitors, Grenader said:

"I would rather have my dealers compete with firms that know enough about pricing to preserve adequate margins.

"One of the men pointed this up when he said, 'This gave me a much better understanding of my break-even point, and where and when jobs can be taken at a lower mark-up and still be profitable.' "

Typhoon Bows Packaged Air-Cooled Conditioner and Gas-Fired Heater Combination for Roof Mounting



TYPHOON roof-mounted packaged air conditioner with gas heater.

BROOKLYN — A new packaged air-cooled air conditioner and gas-fired heater combination, designed for roof-mounting, has been introduced by Typhoon Air Conditioning Co., division of Hupp Corp.

Available in two sizes with nominal air conditioning capacities of 5 to 8 tons, it offers a complete year-round system for commercial and industrial buildings "with significant economies in installation, operation, and maintenance," according to Typhoon.

The gas-fired heating system providing 160,000 B.t.u.h. output is completely contained within the unit.

The new unit is said to be particularly suitable for shopping center stores, supermarkets, and similar one-story structures.

The unit consists of a cooling system, gas-fired heating unit, air filters, blowers, and controls. All internal piping and wiring is done at the factory leaving only simple fuel and electrical connections to be made in the field, it was stated. An air distribution plenum and diffuser, to carry air to and from the building interior, is also supplied.

According to the manufacturer, the new unit is designed specifically to exploit full advantage of roof-mounted combination cooling and heating systems.

It provides intake and discharge connections through the end. This permits placing the unit over weight-bearing building members — not necessarily over the space it serves — and running ductwork to the diffuser, the company said, adding that additional roof support is not normally required. Elimination of under-unit connections also permits easy, economical installation of flashing around ducts, it was noted.

The compact unit measures 55 by 92 in., and is 74 in. high. The 5-ton unit weighs 2,000 lbs. and the 8-ton unit, 2,200 lbs.

The air-cooled condenser has a propeller type fan which discharges air vertically "so its performance is not affected by wind velocity." Lift up-drop out access panels make servicing easier.

Although designed specifically for roof mounting, the unit may be used in other locations.

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Crusey To Direct Sales Agents for Drayer-Hanson

LOS ANGELES—First in a series of staff expansions to be announced by Irvin Secord, Drayer-Hanson's new sales manager, air conditioning and refrigeration, is the appointment of Howard Crusey as sales engineer in charge of sales agent groups in certain select territories.

H. Crusey

Crusey was associated with Drayer-Hanson for several years in the late 1940's.

Secord said Crusey's new assignments include the direction of many of the sales agent organizations formerly serviced by Secord prior to his recent promotion.

In the Pacific northwest, the states of Washington, Oregon, and Utah will be under Crusey; in the midwest, Kansas, Minnesota, and Nebraska. Also, Colorado, Oklahoma, Arkansas, and Florida. Other assignments are

For the 12 months just prior to returning to D-H, Crusey was on special missile facility design projects for Daniel, Mann, Johnson & Mendenhall, prominent architect - engineering group, here.

Walter E. Titchener Dies

WILSON, N. C.—Walter E. Titchener, 66, vice president and factory manager of Hacknew Body Co., which makes refrigerated truck bodies, died recently of cancer at Memorial hospital in Chapel Hill.

Light Fixture-Low Velocity Diffuser May Help Cut Cost of Changes for Office Bldg. Tenants

CHICAGO — By combining modular design with the use of combination ceiling lights and low velocity air diffusers, the architects and engineers in charge of the 23-story addition being constructed for the Harris Trust & Savings Bank here believe they are providing "built-in flexibility" which will minimize costs of the almost inevitable changes in floor plans required by office building tenants.

Approximately 9,200 "multivent troffer" diffuser-lighting units will be provided for more than 230,000 sq. ft. of floor space in the building, according to Skidmore, Owings, and Merrill, Inc., the architect-engineer.

The troffer consists of a glass-bottom, flush-mounted fluorescent lighting fixture, 12 in. wide by 54 in. long, with tiny side slots which transmit a vertical air flow from a low velocity tube to a low velocity cooling system. The lighting fixture was manufactured by Benjamin Electric Mfg. Co., Des Plaines, Ill., a licensee of Pyle-National Co., whose Multi-Vent Div. designed and developed the fixture.

Although not all of the fluorescent fixtures in the new building will be connected with the ductwork, each one will have the necessary air slots, making it readily adaptable as a diffuser unit at any time.

The theory behind the new modular design in office buildings, the architect explained, is an anticipation of change in floor-plan requirements and a built-in flexibility to meet that change in a smooth, low-cost way.

This idea was born out of long, sad experience by building owners who found that space requirements of new tenants—or changing requirements of existing tenants — forced the tearing out of walls, relocation of lights, heating units, air conditioning units, return vents, and of other costly modifications.

Design Space Above Ground Level In 5 × 5 Ft. Modules

To achieve "built-in flexibility" in the new Harris Trust building, the office space above ground level was designed in 5 by 5-ft. modules. Each of these will be equipped with its own independent lighting supply, air supply, or air return device.

The space is therefore ready to be partitioned off at any time. An entire block of these modules can be arranged into any combination a tenant desires, without any change whatsoever in the fixture placement.

Illustrating the flexibility achieved with low velocity methods, the engineers said, is the fact that, even now, tenant space requests are being made which would have disrupted conventional air diffusion before the building was yet completed.

Some floors, initially to be occupied by single tenants, may be readily modified to accommodate a number of tenants, they said. Since each module is self-sufficient, light fixtures are merely connected—if necessary —with flexible tubing to the nearest air duct to meet the new partitioning layout.

Aesthetics Big Factor

Aesthetics was a major factor in choosing the combination fixture, it was pointed out. In the endless tussle between architects and engineers, a balance must be found that will satisfy both design considerations and technical objectives.

The desirability of achieving a completely "uncluttered" ceiling was an important consideration on this project and the combination light-diffuser lends itself to that objective, they indicated.

Moreover, since the lights are installed by the electrical men according to their lighting needs, and the diffusers are installed by air conditioning men according to ventilating needs, a lack of perfect coordination

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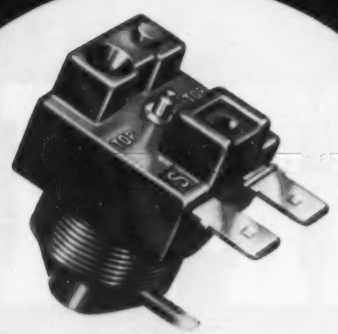

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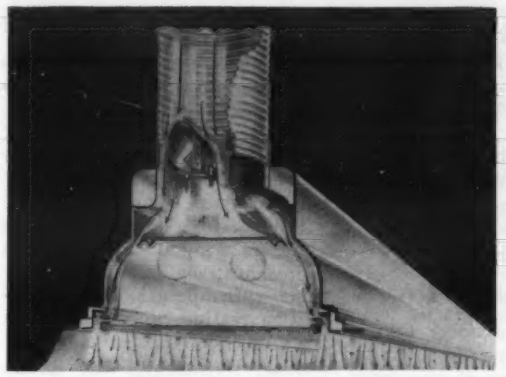

FIG. 1—Cross-sectional view of "multi-vent troffer" shows how low velocity conditioned air is delivered to space through ceiling fixture which also provides fluorescent lighting.

FIG. 2—Air is delivered at low velocity to flush-mounted ceiling fixture by small flexible tube connected to supply ductwork.

between the two can result in an unsatisfactory design pattern on the ceiling, the engineers pointed out.

Because of the troffer's low velocity it should also minimize ceiling dirt streaks. The air flow should also keep the lights themselves freer from dirt, maintaining a higher foot candle power.

Personnel Comfort Was Another Factor

Personnel comfort was still another large factor. The combination troffer affords a slowly descending blanket of cool air which, combined with a low noise factor, disguises its existence.

The troffer installation also helped to overcome a major construction problem in the building.

Since the floor to floor height of the structure was already established by the adjoining Harris Trust and Savings Bank building, it was vital that there be a minimum amount of space required for lighting, ductwork, and diffusers.

By combining light fixtures with diffusers, it was possible to place the ducts between rows of fixtures, thus providing at least 6 in. of additional ceiling height on each floor.

A different arrangement was designed for the first floor of the building. A woven metal ceiling will be used equipped with Pyle-National Multi-Vent MV-100 type of air valve diffusers.

In the new quarters, which are scheduled for completion in early 1960, the Harris Trust and Savings Bank will occupy the first eight floors. The balance is available for leasing and occupancy will follow bank occupancy.

On the Harris Bank addition, Steven A. Lash was senior mechanical engineer for the heating, ventilating, and air conditioning system under the direction of Samuel Sachs, associate partner and chief mechanical engineer.

Turner Construction Co. is the general contractor and Kroeschell Engineering Co. is the subcontractor for heating, ventilating, and air conditioning work.

Cooling will be provided by a York 1,250-ton unit while heating will be supplied by an Erie City boiler of 28,000-lb. steam capacity.

Two identical boilers and two York machines of 1,200 and 500-ton capacities handle the existing Harris Trust building, it is pointed out.

Fontainebleau Motel Has 200 Cool Rooms

NEW ORLEANS—With 200 air conditioned guest rooms and suites, New Orleans' new multi-million-dollar Fontainebleau motor hotel held its "pre-formal" opening recently.

Robert P. Cournoyer, general manager, estimating that the hotel is better than 80% completed at this time, said he and his associates decided that the deluxe establishment will be opened in a series of successive steps.

"In the fall," Cournoyer said, "the management plans to undertake increasing the number of rooms from 200 to 400 and when completed the Fontainebleau will be the largest motor hotel operating in the United States."

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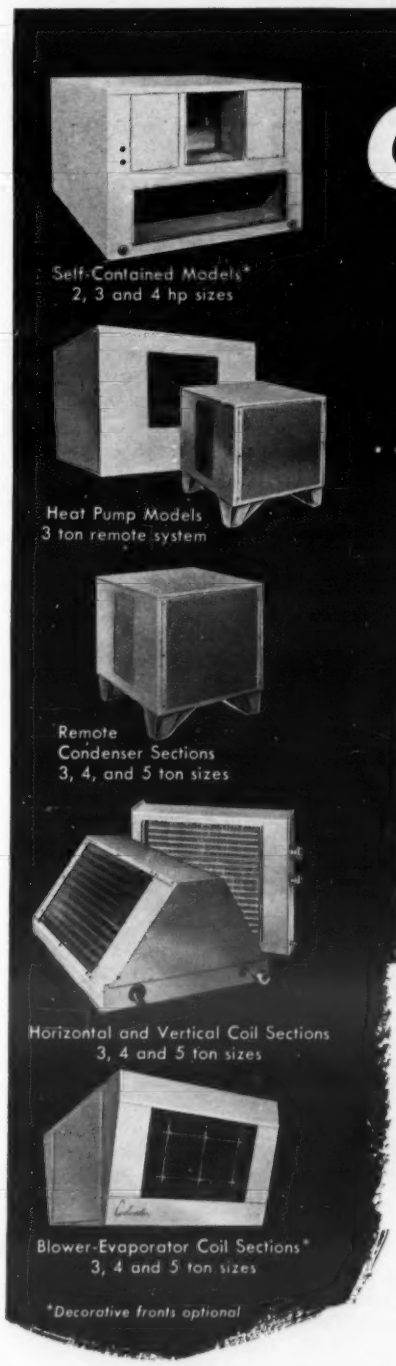
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Inside Dope

By GEORGE F. TAUBENECK

(Concluded from Page 1, Col. 1)

sells Fedders package air conditioners in pro-football's off-season—like now.

He works for Services, Inc., the Fedders Indianapolis distributorship—which was founded by his father-in-law.

Mary Jane Stewart and Stewart Lauer are engaged to be married!

To the infinitesimal few who haven't been properly introduced, Mary Jane is the perennial "sweetheart of the air conditioning industry."

During World War II she was the active secretary of ACRMA. Following its merger with REMA, she took detail-loads off the broad shoulders of George Jones. Stewart Lauer, of course, is Mr. Refrigeration Himself. The silvery-haired retired Board Chairman of York still is handsome, vigorous, and "full of beans."

Stewart and Stewart.

How To Get Hep

In Paris today, a scout reports, French haberdashers are selling neckties which already have been spotted with sauces from famous Parisien restaurants.

Which souvenirs, no doubt, will be shown off proudly back home at the club.

More Good News from Abroad

American taxpayers, take courage!

The government of Austria has published a 368-page volume entitled: "Ten Years of European Recovery Program In Austria, 1948-1959:"

Now hear this: It is dedicated to "the unknown American taxpayer to whose tax contributions the Austrian economy owes the millions contributed in goodwill toward reconstruction."

Nor is that all: Austrian Chancellor Julius Raab, in a Foreword avers:

"We should be mindful of the fact that the means of our reconstruction were contributed by the American taxpayer in pursuance of a broadly conceived generous plan of his government. To him, America's man in the street, Austria owes its thanks."

Man, we're appreciated. Bully for Austria! Bully for us!

Export salesmen please note.

Good News for Bright Young Men

The Engineers Joint Council now is the sponsor of the United States Committee of the International Association for the Exchange of Students for Technical Experience (IAESTE). Its secretariat is located in EJC's headquarters at 29 West 39th St., New York City 18.

IAESTE is an international, non-governmental, non-profit organization founded at London University's Imperial College in 1948 for the purpose of providing on-the-job training in international industry for student engineers and scientists.

Its initial ten Western European member countries began the program with an exchange of 920 students. At the close of 1958, 39,996 students had been exchanged between its 26 member countries.

Policy for IAESTE stems from its Annual Conference of representatives of member nations, with operational responsibilities resting with each country's own committee.

Josef Wischeidt, Jr., is the executive secretary of the U.S. IAESTE committee.

The IAESTE program is directly concerned with equating engineering and science students and industrial experience. Its activities are, therefore, of direct concern to the EJC Committee on International Relations and its responsibilities of furthering engineering relationships through engineering and industrial organizations all around the world.

In operation of the program itself, advanced university students use the facilities of the U.S. IAESTE committee to arrange for training in industrial techniques of another country.

At the same time, foreign students come to the U.S. for training experience with American industry.

The program is reciprocal. Number of American students who can study in a foreign country depends upon the number of foreign IAESTE students who are accepted in the U.S.A.

Participating U.S. companies pay a nominal fee to cover administration costs. Each American student interested in a training experience abroad, incidentally, is charged a nominal registration fee.

Students also pay their own travel expenses to the nation of their choice.

Once there, however, they receive a maintenance allowance which covers living expenses during their training period.

Sounds like a real good deal.

Worth Thinking About Twice

The safest rule in life, instead of reforming others, is to set about perfecting yourself.—*London Tit-Bits magazine.*

Don't waste time looking back. Your eyes are in the front of your head.

Has it ever occurred to you that in our social system the politician is enabled to reach a position of responsibility without having any training? He serves no apprenticeship. He masters no course of study. He need pass no examination as to his ability. He receives neither a diploma nor a license to practice. The veterinary who doctors our dogs and cats is required to show more careful preparation for his calling than is the politician who seeks to assume the right to direct not only our industrial but much of our personal life.—*Shriner Magazine.*

Progress consists not in the annihilation of yesterday by today, but in keeping that essence of yesterday which had the strength to create this better today.—JOSE ORTEGA y GASSET.

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Nautilus, Skate Find Cooling Vital Under Pole

WASHINGTON, D. C. — Essentiality of air conditioning—cooling as well as heating—under the polar ice pack was proven by the successful passage of atomic-powered submarines *Nautilus* and *Skate* when they established new outposts for U. S. defenses.

Amazing as this undersea adventure is, so was the routine ease with which it was carried out. Lt. John M. Harvey in charge of the atomic reactor aboard the *Nautilus*, said:

"I feel guilty in being told I'm a hero. Under the Pole it was about 32° in the water outside, but inside it was about 70° F. The air conditioning is extraordinary."

The *Nautilus* cruised 1,830 miles under ice and open water in 5½ days. *Skate* did the trek in 10 days on its first trip, but took time to surface in polynas (occasional lakes created by holes in the ice). The most recent journey was exploratory and not for speed.

The feat was possible chiefly because the atomic engines do not require oxygen. However, the 116 officers and men aboard who make the decisions do need a system for freshening their sealed atmosphere. Temperature and humidity must be controlled and carbon dioxide, cooking and body odors, and heat from lights, machinery, and the nuclear reactor removed.

According to Charles V. Fenn, Carrier Corp. vice president, whose company supplied the refrigeration equipment for cooling and dehumidifying air in the subs, "air conditioning is as essential at the Pole as it is at the Equator."

NEWS readers are invited to write to the editor giving their opinions on any subject of interest to the industry.

'Beats' To Beat Heat

San Fernando Valley Teen Center Cooling (Like Most Everything Else) Is a Gift

VAN NUYS, Calif. — The avalanche of teenagers expected at the new San Fernando Valley Teen Center here will be able to "beat this season's heat—for sure!" says Program Director Bob Tunks of the San Fernando Valley Youth Foundation, Inc.

A giant 5-zone Drayer-Hanson multizone air conditioning unit will see to it! "And," beams Tunks, "it's a gift to us from the manufacturer." But that's typical of this project.

The spokesman is guiding building destinies for the Valley Youth Center. It is shortly to be ready for the more than 60,000 teenage (13 to 19-year-old) residents of San Fernando Valley.

First unit of the 36,000-sq. ft., $181,000 project (current cash evaluation) is nearing completion in the Sepulveda Flood Control Basin. It is on 20 acres of land secured from the Federal government on a long-term lease for $1 per year.

Building materials used in the project have been 95% contributed "gratis"; as have some 8,000 man-hours of labor by L. A. trade unions—some $35,000-worth, so far.

The Class A building was designed without fee by Al Boeke of Boeke, Kinsey & Associates.

Concerning one of the final phases of construction, total air conditioning, it was indicated the D-H-donated multizone system will provide year-round comfort heating and cooling for all public-space areas. A separate Lennox heat pump system will condition air in administrative office area. It, too, is a donation.

Tunks has indicated the list of contributors mounts, each weeks.

Carrier Corp., through Air Conditioning Co., Glendale, is stated to be committeed to furnish a compressor for the job. A Wright hot-water boiler has been given, as have Bell & Gossett circulating pump (through Dawson Engineers, L.A.); "Trade Wind" exhaust fans; and "Alfol" aluminum insulation. Controls and grilles are also manufacturer-contributed.

Free sheet metal for ducting and "gratis" labor to install is being lined up from various shops by Local 108 of the Sheet Metal Union.

Still needed on the project, however, was an evaporative condenser to match the system.

Design engineering on heating, ventilating, and air conditioning phase was provided, "no charge," by Ken Simons of Air Conditioning Co., Glendale; also job installers.

Working without commission, too, is Air Conditioning Supply Co., Los Angeles—a D-H sales agent, with sales engineer Chuck Corbett handling details, it was announced.

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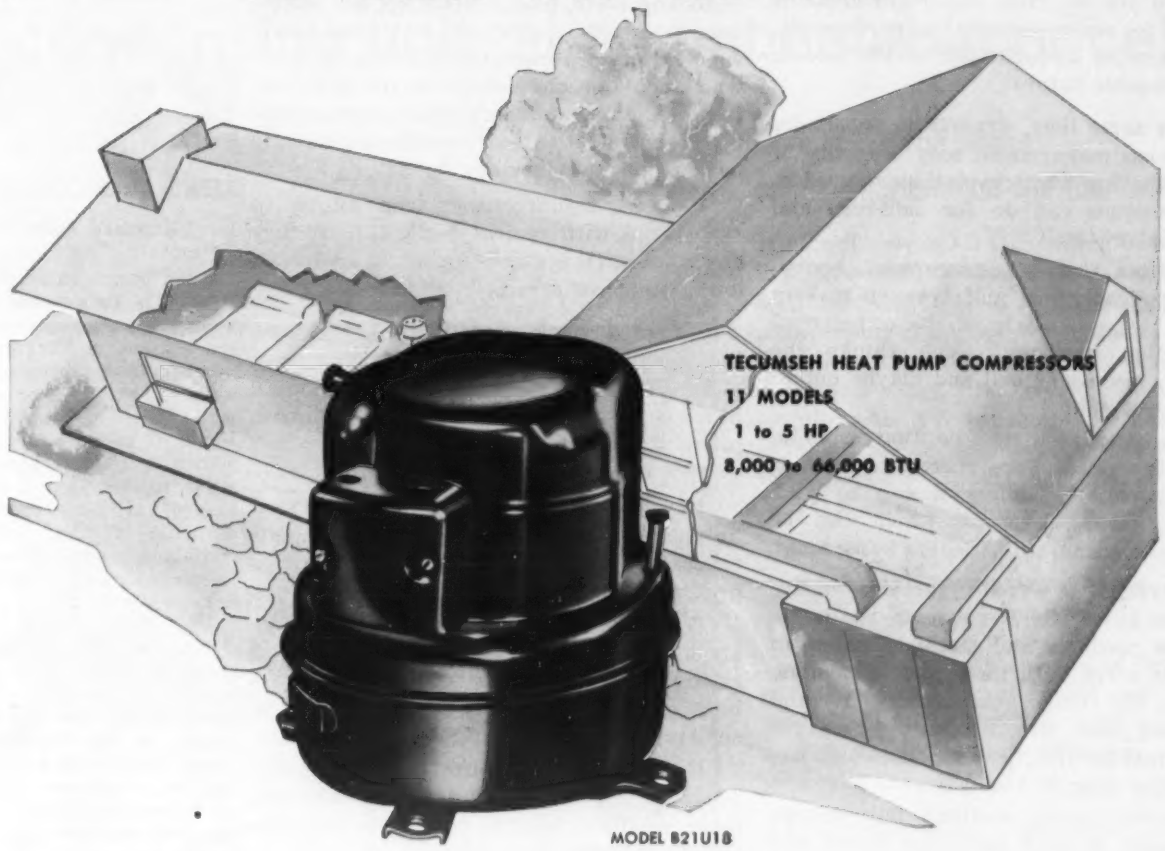

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They'll Do It Every Time

by Jimmy Hatlo

THE ACTS YOU HIRED CAN'T GET HERE--BIGDOME BROUGHT EIGHT EXTRA GUESTS--THE ORCHESTRA GOT ANOTHER JOB--THEY GOTTA SCRAM AT ELEVEN---
LOOK, FUTELESS--YOU'RE CHAIRMAN OF THIS THING--WE GOT A SURLY WAITER---MY WIFE COMPLAINED ABOUT THE LOBSTER AND HE INSULTED HER---WELL--WHAT ARE YOU GOING TO DO ABOUT IT?
POOR FUTELESS--HE AIN'T GOT ENOUGH HEADACHES RUNNING THIS OFFICE BRAWL--ANGLEWORM WANTS TO PROMOTE A BOUT FOR HIM----
RUNNIN' THIS WINGDING MAKES FUTEY FEEL LIKE AN EXECUTIVE--THE REST OF THE TIME HE'S JUST ONE OF THE HIRED HANDS----
LAST YEAR ANGLE KICKED BECAUSE HIS TABLE WAS WAY OUT IN LEFT FIELD--THIS TIME HE'S SORE BECAUSE IT'S RIGHT NEXT TO THE DRUMMER---
AND ALL NEXT WEEK BIGDOME WILL BE TELLING HIM HOW THE PARTY SHOULDA BEEN RUN---
SYMPATHIZING WITH THE OFFICE SHINDIG IMPRESARIO---
THANK AND A TIP OF THE HATLO HAT TO BUD MC CRANOR, CANTON, OHIO
4-3
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We'll All Have to SELL To End Unemployment

SURELY it should be obvious to economists, management consultants, and executives all up and down the line and staff that selling, advertising, merchandising, and promotion are the most important areas of endeavor for every corporation, partnership, and Ma-and-Pa store RIGHT NOW, and in the foreseeable future.

At the same time, experts in economics and business management may be guilty of underestimating what revolutionary production techniques can do for salesmen and their collaborators.

Too often there's a porcupined, booby-trapped psychological gulf between makers and sellers, particularly in the commercial refrigeration business. Each thinks the other is a necessary evil and maybe not so necessary at that.

Human though it may be, that bristling attitude is foolish. Sure, there's no point in making something unless it can be sold. Producing is an exercise which can be multiplied mechanically. Selling is personal.

However, if it weren't for imaginative "slide rule boys," the technicians who introduce new products and methods, salesmen would get bored with their jobs of pushing the same old things year after year. And advertising men would ulcer-die younger than normal for their profession (which has a mortality rate in the fifties).

Moreover, people wouldn't buy enough from dealers to keep the latter happy and solvent because there wouldn't be new-idea stuff to make consumers dissatisfied with what they already have.

AIR CONDITIONING, HEATING & REFRIGERATION NEWS weekly includes reports of technological progress which will put money in the bank for manufacturers, dealers, contractors, and sales personnel (women and men). We report what readers can sell and *are* selling.

Here's just one example: Some time ago an editorial in AIR CONDITIONING, HEATING & REFRIGERATION NEWS challenged the plastics industry to come up with molded cabinets for commercial refrigerators.

Already—in record time—this challenge not only has been accepted, but is near fruition.

By saving immense amounts of money in tooling costs, plastic housings will enable imagineers to introduce a tremendously wide variety of consumer-titillating products which could obsolete whatever refrigerators, freezers, room air conditioners, commercial refrigerators, etc., that consumers presently own, from a styling standpoint.

Reason: manufacturers can afford to experiment with radical designs, until they find some with genuine appeal, at relatively low tooling costs.

"Planned obsolescence," which has been the key to automobile manufacturing prosperity, hitherto has eluded the cooling-and-heating business. We've been stuck with products which rarely wear out, and which owners are lethargic about changing.

New manufacturing techniques augured by plastics cabinets might be a clue to this previously elusive factor in our industry's progress.

Over and over again in the refrigeration, air conditioning, and heating industries (all related and intertwined) OEM suppliers have given ideas to manufacturers of consumer products.

By taking an interest in production progress, contractors and dealers who sell these products locally, no doubt, can contribute valuable ideas, also.

"One for all and all for one" is a motto which will help everyone connected with our excitingly promising industry to achieve personal progress—in addition to advancing the living standards of America and the entire world.

ALL of us must SELL our ideas, if we are to employ the unfortunate people who are out-of-work, who want to work—and whose assistance we need to advance our nation's and our own personal fortunes.

Hence, technical progress should wed with merchandising alertness to compound prosperity with interest.

The trouble with most Americans is not that they have no values but that they have too many values of the wrong kind.—ASHLEY MONTAGU.

"Once a woman passes a certain point in intelligence she finds it almost impossible to get a husband: she simply cannot go on listening without snickering."—H. L. MENCKEN.

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F. M. COCKRELL, *Founder*

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SEEKS CURRICULUM DATA FOR AIR COOLING COURSE

Klamath Falls, Ore.

Editor:

I had been a subscriber to the NEWS for four years before I became a Refrigeration Instructor at Oregon Technical Institute and have continued my subscription for the past six years while teaching. I have found it to be of great value as an instructional aid. Of such great value in fact that I urge each student of mine to become a subscriber. The information contained in the NEWS helps to keep me abreast of current findings in the field.

Our Refrigeration Technology Course here at Oregon Technical Institute is a two year (eighteen months of school time) curriculum and has been taught at the Technical-Vocational level with an eye on turning out graduates who can go into the installation and servicing field but now some changes are to be made.

This session of Oregon Legislature has handed down the ruling that Oregon Technical Institute be changed from the State Board of Education to the State Board of Higher Education. Also that our Refrigeration Technology Curriculum be changed to some form of air conditioning course. Taught on the pre-engineering level.

The emphasis is to be placed on theory with less time left for laboratory and manipulative skills. This causes us to want to learn, first, where in the northwest with its slower acceptance of air conditioning, will men with this type of training seek employment? Secondly, what must we incorporate into this new curriculum to make it worth while for the student.

I feel that you are in complete and constant touch with the manufacturers and with the societies who are in contact with the design, installation and servicing of this type of equipment. What we need to know is, what must we include in a new two year air conditioning curriculum, and what the air conditioning and refrigeration industry as a whole will expect from a graduate.

RALPH L. FULLER

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Recent Silver Shield Activities

38 Lansing Trainees To Graduate May 28

LANSING, Mich. — Graduation ceremonies of the Lansing "Silver Shield" training school will be held Thursday evening, May 28, according to Joseph Sloane, chairman of the Education and Standards Committee of the local Lansing Indoor Comfort Bureau.

Receiving graduation certificates will be some 38 dealer-contractors who have successfully completed the ten-week training program. Instructors for the school were Dean Emeritus Lorin G. Miller of College of Engineering and Prof. Charles H. Pesterfield, Mechanicanl Engineering Dept., Michigan State university.

The ceremonies will take place at a dinner meeting beginning at 6:30 p.m. in the Skyline Room at the Famous Grill, 539 E. Michigan Ave., Lansing.

Attending besides all local members of the Indoor Comfort Bureau will be Herbert T. Gilkey, technical director, and James D. Nolan, assistant director of public relations of the National Warm Air Heating & Air Conditioning Association.

Niagara Falls Contractors Hear How To Organize Indoor Comfort Bureau

NIAGARA FALLS, N. Y.— At a meeting held recently at the Niagara hotel, some 30 area heating and cooling dealer-contractors got first hand the full story of the "Silver Shield" concept that is expanding throughout the country.

Silver Shield is the name given to a promotion and organizing program developed by the National Warm Air Heating & Air Conditioning Association of Cleveland.

Arrangements for the meeting were made in cooperation with Eugene Dimet of Simon Oil Co. Invited were every wholesaler, manufacturer's representative, and dealer-contractor who sells, installs, or services ducted warm air systems in the Niagara Falls metropolitan area.

For nearly three hours they heard a detailed explanation of how a local Indoor Comfort Bureau is organized; how dealer-contractors join together to give the homeowner a guaranteed system; and how the built-in protections make certain that the system will work properly and perform according to the national association's manuals, it was pointed out.

Making the presentation was Richard von Munkwitz, assistant director of public relations of the national association.

. . . In Grand Rapids . . . Philadelphia

NEARLY 50 Grand Rapids, Mich. area contractors heard Silver Shield presentation and elected co-chairmen to form steering committee to organize Indoor Comfort Bureau.

PICTURED JUST BEFORE making presentation to Philadelphia group are (l.) Richard von Munkwitz and James D. Nolan of the NWAHACA. On right side of table are Philadelphians (back to front) William Sherwood, Erwin Alber, Wes Steiner, and Frank Sherwood.

Boston Apartment House Gets All-Year Air Conditioning

BOSTON—Central year-round air conditioning for the entire structure is planned for the 17-story apartment building of brick and glass soon to rise at the corner of Beacon and Fairfield Sts., overlooking the Storrow Embankment and the Charles River Basin.

Owner of the property is The 330 Beacon St. Corp. Architectural designs for the building were executed by Hugh A. Stubbins & Associates of Cambridge. General contractor is Turner Construction Co.

The building will contain 78 rental units of many different sizes and room arrangements. Rising 155 ft. above the street, it will be supported by steel-clad reinforced concrete piles going down nearly 200 ft. to bedrock.

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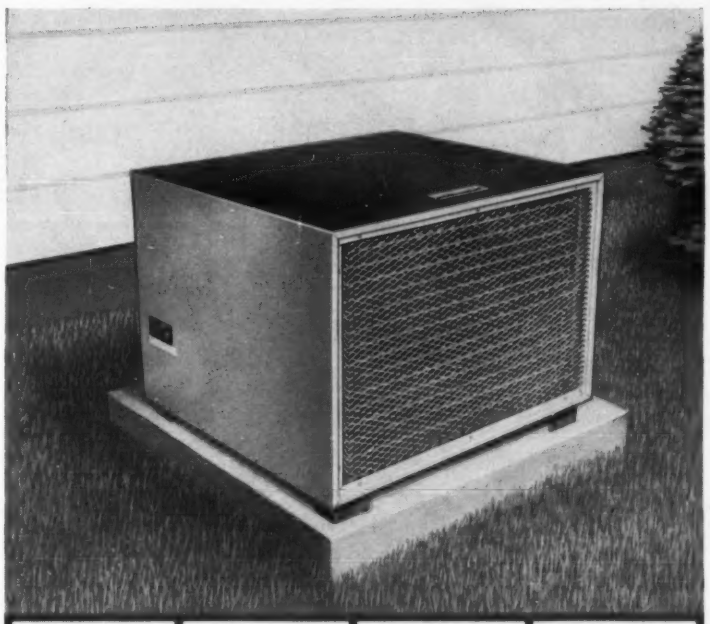


Here it is—the finest condensing unit on the market!

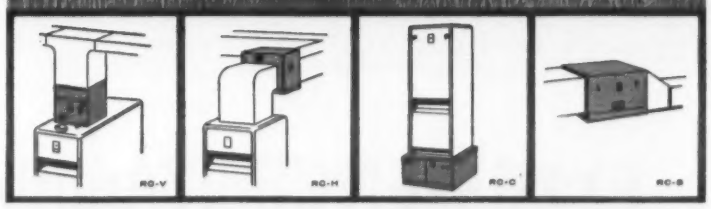
It's the all-new AC-B Condensing Unit in 2-, 3-, 4- and 5-hp sizes. If you haven't seen the "spec" sheets on this equipment, be sure to contact your American-Standard Air Conditioning Division distributor today. And be ready for a surprise when you see the prices! For example, the suggested dealer price for the AC-2B, a 2-hp unit, is only $361.84. And this value is typical of the whole American Standard line!

NEW AC-B HAS IMPROVED DESIGN THROUGHOUT!

To start with, the AC-B is one of the most compact, easy-to-handle units made. This fact, plus these really advanced design features, gives you a *solid* sales advantage:

- Controls are *sensibly* located so you can reach them easily.
- Suction and liquid line valves in front for simplified servicing.
- High-voltage line current is supplied *directly* to condensing unit.
- Relay control panel has improved-design delay-sequence feature.
- Entire electrical system approved by Underwriters' Laboratories for outdoor operation.
- 4- and 5-hp units have *two* condenser fans and motors for maximum cooling efficiency.

Add to the new AC-B any of the American-Standard evaporators, and you have the finest cooling system made.

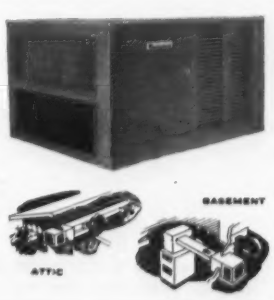


Here's the "hottest" cooling combination on the market: the all-new AC-B Condensing Unit and one of these advanced-design evaporators!

There's an American-Standard evaporator for *every* installation—big home, small home, *any* size home (and for small commercial jobs, too). Four models—RC-V, RC-H, RC-C and RC-B—for every furnace and duct-work design, and in capacities for 2-, 3-, 4- and 5-hp installations. All units have the added feature of an expansion valve with a thermally aged diaphragm for longer, more reliable service. Be sure you see the new "specification" sheets—and the new low prices—at your distributor *now!*

ACP—unmatched for price and value!

It's been called "the most underpriced air conditioning unit on the market!" But don't let the price fool you—the ACP is a finely engineered *quality* unit. Just compare these features with any other package unit: *twin* compressors give continuous air circulation and positive humidity control, with either full- or half-capacity cooling automatically controlled by a thermostat; exclusive heat exchanger cuts refrigerant temperature by an *extra* 20 degrees; powerful condenser fan gives unmatched cooling. And the ACP is protected by a Five-Year Warranty!



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AMERICAN-Standard
AIR CONDITIONING DIVISION

How To Select Receiver-Filter-Drier or Separate Receiver-Filter for Auto Cooling

DALLAS — The factors that should be taken into consideration in selecting combination receiver-filter-driers, or a separate receiver-filter for an automobile air conditioning system, were outlined by K. M. Newcum, vice president, Remco, Inc., before an Automotive Air Conditioning Forum of the Texas Section of the Society of Automotive Engineers.

Separate Units Favored By Many Manufacturers

"There seems to be an increasing number of manufacturers of automobile air conditioners who believe that there is an advantage in using a separate receiver and a separate filter-drier over using a combination receiver-filter-drier, with some proponents of the separate receiver plan seeming to feel that the combination receiver-filter-drier is not as efficient as it relates to the operating head pressure, distribution of refrigerant, filtering, drying, and the like," said Newcum.

"A rather careful study would indicate that this theory does not seem to be borne out in practice. It appears that there is no justification for believing that liquid refrigerant which is produced in the condenser will do a more efficient heat removal job in the evaporator, whether it is received and stored in a separate receiver and then passed through a separate filter-drier than if it were sent to the evaporator via a combination receiver-filter-drier.

"It appears that the net internal volume which is available to the liquid; the location in relation to the cooling effect of ram and fan induced air, and the arrangement of the inlet and outlet connections are the important factors to consider in either a combination receiver-drier or a separate receiver. All of these factors presupposes that connecting lines, fittings, and syphon tubes if any, are such that the pressure drop at no point exceeds 2 p.s.i.g.

Avoid Turbulence at Receiver Outlet

"Care should be exercised to make certain that the 'jet effect' of refrigerant entering the receiver does not cause turbulence at the receiver outlet, otherwise bubbles will prematurely appear at the sight glass.

"There is very conclusive evidence to bear out the fact that locating the receiver-drier or receiver out ahead of the radiator has a definite advantage over locating inside the engine compartment or under the fender skirt. The principal reason is the heat dissipating advantage gained by the 'out-in-front' location. Lower operating head pressures are effected; also there is a very substantial increase in sub-cooling of the liquid. Both of the advantages add up to better over-all system performance.

"With Refrigerant-12 at 125° F. receivers used in automobile air conditioning systems vary in internal volume from approximately 3 lbs. down to 1 lb. or less.

"A typical condenser used in automobile air conditioning system having two rows of ⅜-in. o.d. by .020-in. wall tubes, has slightly less than 60 lin. ft. equivalent of tubing. Using round figures 1 (one) lb. of liquid Refrigerant-12 occupies 20 lin. ft. of ⅜-in. condenser tubing. Roughly speaking, about 2 lbs. of a Refrigerant-12 are distributed throughout the liquid and suction lines, the evaporator, and the condenser.

"All of this points up the fact that the refrigerant charge becomes increasingly critical with a reduction in the internal volume of the receiver or receiver-drier. For example: a system having a 3-lb. receiver would have a total system charge of roughly 5 lbs. It could operate successfully with 3 lbs. and could possibly stand an overcharge of 1 lb. for a total of 6 lbs.

"However, a system with a 1-lb. receiver starts to show bubbles at the sight glass with a reduction of perhaps ½ to ¾ of a pound and could stand an overcharge of perhaps slightly less than 1 lb.

"Overcharged refrigerant backs up into and renders ineffective a portion of the condenser. Overcharging is one of the serious contributing causes to high operating head pressures, which in turn, reflects in expansion valve failure, compressor failure, clutching problems, and general unsatisfactory system performance.

"High operating head pressures spell extremely high temperatures at the compressor discharge and the meet of the condenser. High discharge temperatures, even with a dry system, results in oil breakdown which releases contaminants that show up in the form of acids and sludges as well as carbonized oil.

"These contaminants tend further to assist in the breakdown of the oil which in turn contributes to seal failures, pitting of the compressor discharge and suction valves, and causing general deterioration of the moving parts in the system.

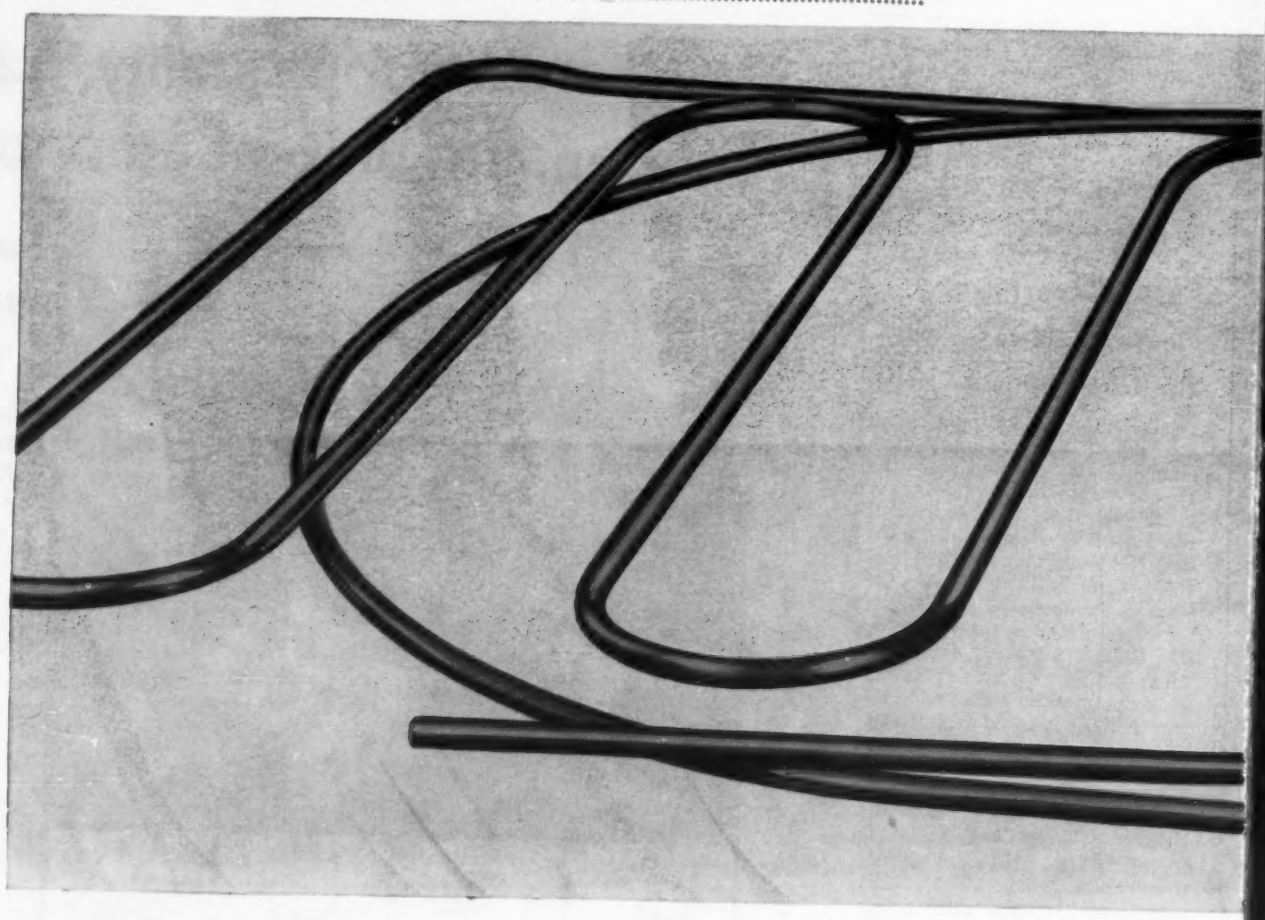
"Therefore, whether a separate receiver or combination receiver-drier is used, sufficient internal volume should be provided to minimize the criticalness of the refrigerant charge, since field servicing is not in many cases an exact science—plus the fact that many servicemen feel they have done a better charging job when they 'stick in' an extra pound or two of refrigerant.

"All of the aforegoing has dealt with the receiver as such. Some critics of the combination receiver-drier claim that powdering and dusting of the desiccant and other field trouble result from the combination and that these troubles disappear when a separate receiver and filter is used.

Improper Design Cited

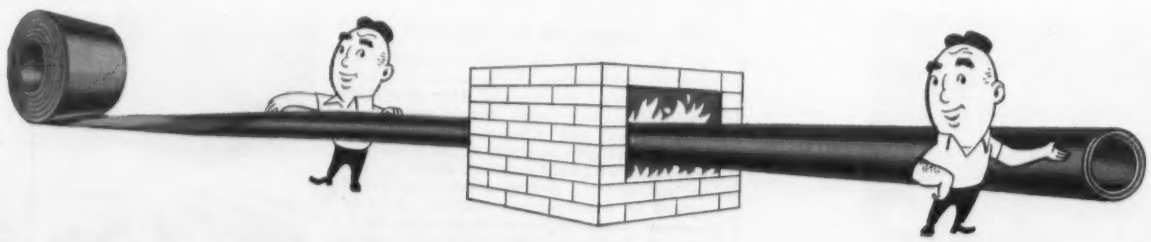
"It has been our experience that the field difficulties and failures with either arrangement are due to improper design rather than to the fact that in one arrangement the filter-drier is combined with and in

WHY BUNDY LEADS IN MASS-FABRICATION:



EXPERIENCE... Another reason why

Bundyweld serpentine coils are mass-produced by the million on specially designed machines ... each to your exact specifications



Bundyweld starts as a single strip of copper-coated steel. Then it's continuously rolled twice around laterally ...

into a tube of uniform thickness, and passed through a furnace where copper coating fuses with basic steel.

Result: Bundyweld Tubing—double-walled, beadless, metallurgically bonded through 360° of wall contact.

another used separately from the receiver. Since Remco manufactures both types we have no preference.

Requirements of Filter-Drier Noted

"We hold steadfastly to the belief that a filter-drier — whether used in a combination or separately — should have a mass depth filter with flow and filtering capacity vastly in excess of what appears to be necessary; also that the filter-drier and the desiccant bed should be designed so that there is no point at which the refrigerant is restricted to the extent that it develops high velocity through either the filter or desiccant bed.

"High velocities, when concentrated at the desiccant bed, will cause roiling of the desiccant or expressed more plainly, will cause the granuals of the desiccant to rub against one another and/or rub against the screens or other metallic container parts. The roiling continuously generates fines, (extremely small particles of the desiccant) which the high velocity liquid refrigerant may carry through to other parts of the system where their presence is undesirable, or clogging of the filter may result. High velocity may also errode the filter and render it ineffective.

"We use Molecular Sieves in bead form and calcium sulphate in molded form. In both designs we use a massive depth fiberglass filter which completely surrounds and cushions the desiccant to positively preclude powdering and dusting. The mass filter is arranged in such a manner that the velocity of the refrigerant decreases to a very low flow rate so that there is no disturbance of the desiccant and the filter.

"A separate filter-drier obviously provides a more convenient and conventional method of filter-drier replacements, should that become necessary. Adding a filter-drier to a wet or dirty system, instead of replacing the receiver-filter-drier, is considered good practice.

Designer Should Give Attention to Volume

"However, in either case we believe that the automotive air conditioning design engineer should give careful attention to the volume of the receiver or receiver-drier as it relates to the total system charge: its location on the car; the extent to which the moisture absorbing and retention capacity of the desiccant is affected by the higher liquid temperatures prevailing in automobile air conditioning, and the design as it relates to pressure drop or velocity effect upon the desiccant and the filter."

Courtesy Cars Clinch Many Deals

Cooled Station Wagons Help St. Louis Body Shop Sell Auto Air Conditioners

ST. LOUIS — An impressive volume of automobile air conditioners is being sold in St. Louis by Ollie Knebel, owner of Ollie Auto Body Co., through a simple merchandising twist which "works like magic."

As a special courtesy service to his customers, Knebel had always made it a policy to loan customers a car to be used while their own was being repaired, repainted, or otherwise serviced in one of his two shops. Used for the purpose are two station wagons, which are almost continuously on loan.

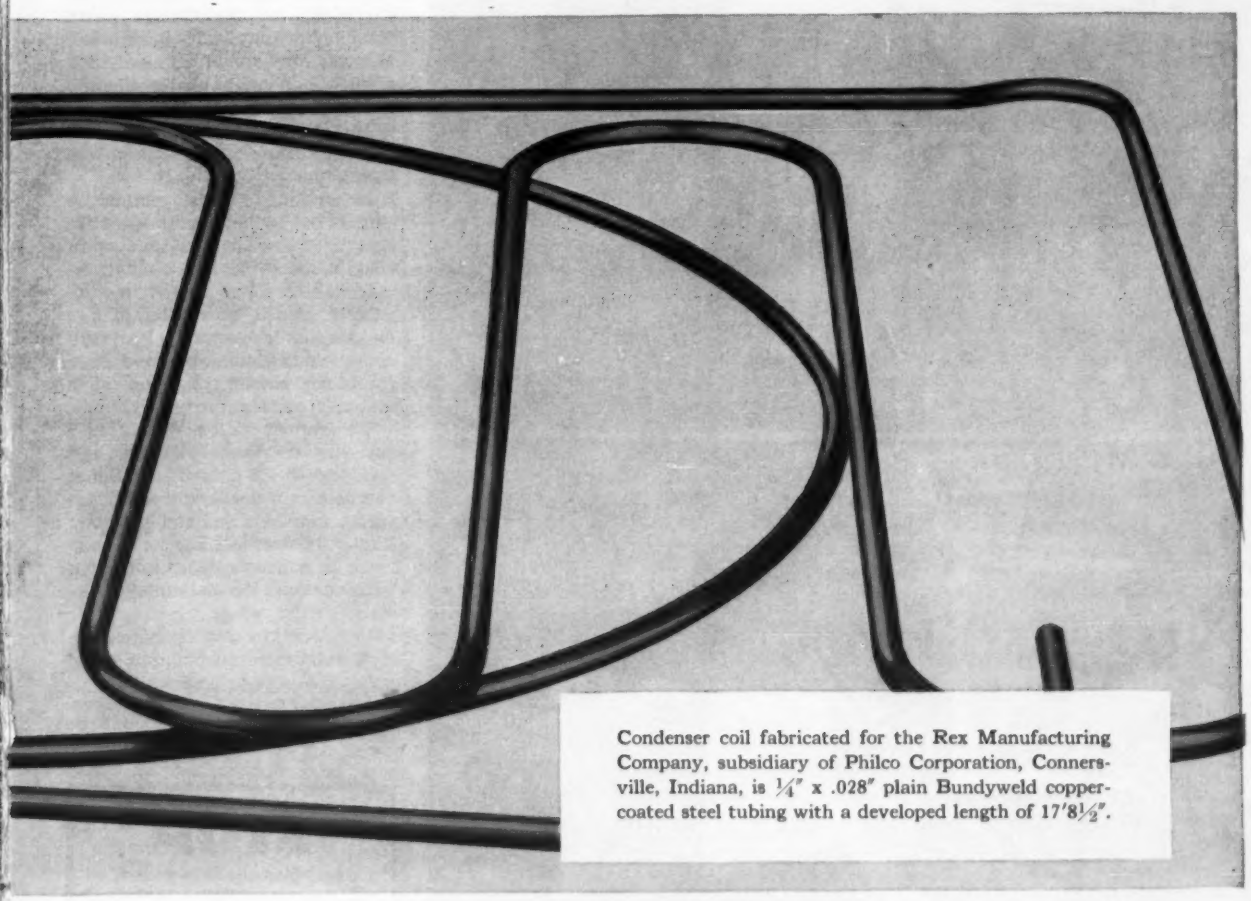
Why not, Knebel asked himself, install an air conditioner in each one and then after the user has become accustomed to the comfortable temperature maintained, approach him on the idea of installing a cooler while the car was still in the shop?

The two installations were made immediately, and ever since Knebel not only loans his body work and upholstery customer a car but shows each how to operate the built-in air conditioner.

"We seldom say anything about selling the customer one until the loan out period is over," he indicated. "Our experience has been that the air conditioner will sell itself, and often after using the air conditioned station wagon during the days when the temperature is near the 100° mark, the body shop customer's first comment on bringing the car back is to find out how much it will cost to install the same equipment in his own car.

"This is particularly true of businessmen who are spending a lot of time in their automobiles and who look with distaste at the prospect of going back to their own non-cooled automobiles."

Knebel's own car is also air conditioned, and frequently when there are more customers on hand than the loan out cars can handle, Ollie loans his own automobile, knowing that it may produce a profitable air conditioner sale as the prospect enjoys the comfort.



Condenser coil fabricated for the Rex Manufacturing Company, subsidiary of Philco Corporation, Connersville, Indiana, is ¼" x .028" plain Bundyweld copper-coated steel tubing with a developed length of 17'8½".

you get precision in Bundyweld parts

Mass-produced serpentine coils like the one shown above must meet two requirements: they must be fabricated to close tolerances . . . and they must be turned out at minimum cost per coil.

Skilled technicians—plus years of experience as the largest supplier of steel tubing to the refrigeration industry—help us do both these things. We have developed machines and fixtures that treat every twist and bend as a mass-production operation. Result: tubing parts that meet your close tolerance requirements and give you *mass-production savings*. And you get two additional benefits:

Double-walled tubing. Bundyweld, the safety standard of the refrigeration industry, is double-walled from a single steel strip . . . withstands severe vibration stress.

Expert design service is free. Solving tough problems is our design engineers' business. They'll show you short cuts that cut costs without sacrificing quality or compromising engineering standards.

It will pay you to check *first* with Bundy®. You'll get unmatched engineering and fabrication service . . . plus *leakproof* Bundyweld tubing. Call us today!

BUNDY TUBING COMPANY • DETROIT 14, MICH. • WINCHESTER, KY. • HOMETOWN, PA.

WORLD'S LARGEST PRODUCER OF SMALL-DIAMETER TUBING • AFFILIATED PLANTS IN AUSTRALIA, BRAZIL, ENGLAND, FRANCE, GERMANY, AND ITALY

There's no real substitute for

BUNDYWELD® TUBING

Bundyweld and Bundy specialty tubings are sold through distributors in principal cities

Fay, Scott Fill Newly Created Honeywell Posts

MINNEAPOLIS — William Fay and Warren Scott have been appointed to newly-created posts in Minneapolis - Honeywell Regulator Co.'s Temperature Controls Group.

W. Fay

Fay has been named chief design engineer for the TCG panel division in Minneapolis, while Scott has been selected as product manager for residential air conditioning and low-voltage thermostats, it was stated.

W. Scott

Fay will supervise the design of such Honeywell products as residential air conditioning control panels, centralized control centers for commercial buildings, "Supervisory Data-Centers," and specialized control panels for industrial applications.

Scott was formerly application engineer on air conditioning and low-voltage thermostats. Fay has been assistant market manager for residential air conditioning.

TECHNICAL CENTER

By Frank J. Versagi, Technical Editor

More on Copper Tube/Aluminum Fin Coil—On Corrosion

Corrosion of copper tube/aluminum fin coils was discussed in the April 20 Technical Center. The discussion pointed out primarily that, while a full understanding of the mechanics of corrosion is as yet unattained, there are practical considerations which can determine the applicability or not of the copper/aluminum combination.

At one point, F. W. McKenna, chief engineer of Kennard Corp., was quoted, "On a dry application, we will use a copper/aluminum coil; on a wet coil we use copper tube/copper fin."

McKenna has pointed out that the term "wet coil" could be misinterpreted, especially if used out of context. He writes:

"The important difference is the distinction between a 'spray coil application' and a 'wet coil application.' A coil that operates dehumidifying might well be considered a 'wet coil.' For this application, we and most of the industry use copper tubes with aluminum fins on the vast majority of equipment we manufacture.

"It is on the sprayed coil application where we very strongly recommend copper fins on copper tubes. We have on occasion used aluminum fins on a spray coil application where the customer accepts responsibility. We do not recommend this latter practice."

Commenting on a Tech Center statement — "Corrosion is a sometimes thing" — McKenna held "Certainly this statement cannot be overemphasized. Anyone using large quantities of coils on relatively well known applications will not have any serious corrosion problems, but the unfortunate individual who uses one coil and has a corrosion problem naturally becomes quite concerned.

"Manufacturers are not able to control job conditions, and I'm sure that we're not the only manufacturer who's had a small percentage of corrosion failures in the field. Whenever practical, it is our policy to help the user determine the cause of failure so that a second failure will not occur. In most cases, the user is surprised to learn of the corrosive atmosphere or fluid which caused the failure."

* * *

Typical of actual corrosion problems in general is that of a major company in South Carolina which uses some 21 water-cooled condensers ranging in size from 3 to 75 tons. Apparently describing a long standing problem, this company wrote the NEWS "Our water-cooled condensers last only an average of three years. The tubes become pitted with small pin holes causing refrigerant to leak out, and if not found in time, water will eventually flood the system."

An artesian well supplies the water; no water saving devices are used. Since one pump supplies water for the drinking water as well as the condensing units, any water treatment will have to be such as to maintain the potability of at least part of the supply.

Obviously there is an answer to this problem, and the NEWS has recommended first steps in obtaining the answer. The surprising thing here, though, is that the condition has lasted long enough for the company to establish an average life for the condensers. This indicates that someone is replacing the condensers, doing the service work—and has never thought through to the base of the problem which almost has to be the nature of the water.

If a condenser or two pit through once in a while, it could conceivably be due to mill scale or some defect in the tubing. When pitting occurs repeatedly, even on replacements, the source of trouble is almost sure to be somewhere else.

* * *

Unique corrosion problems are being encountered in some cases where plastics are being used. Normally, of course, plastics are quite inert and are used where corrosive environments are a problem.

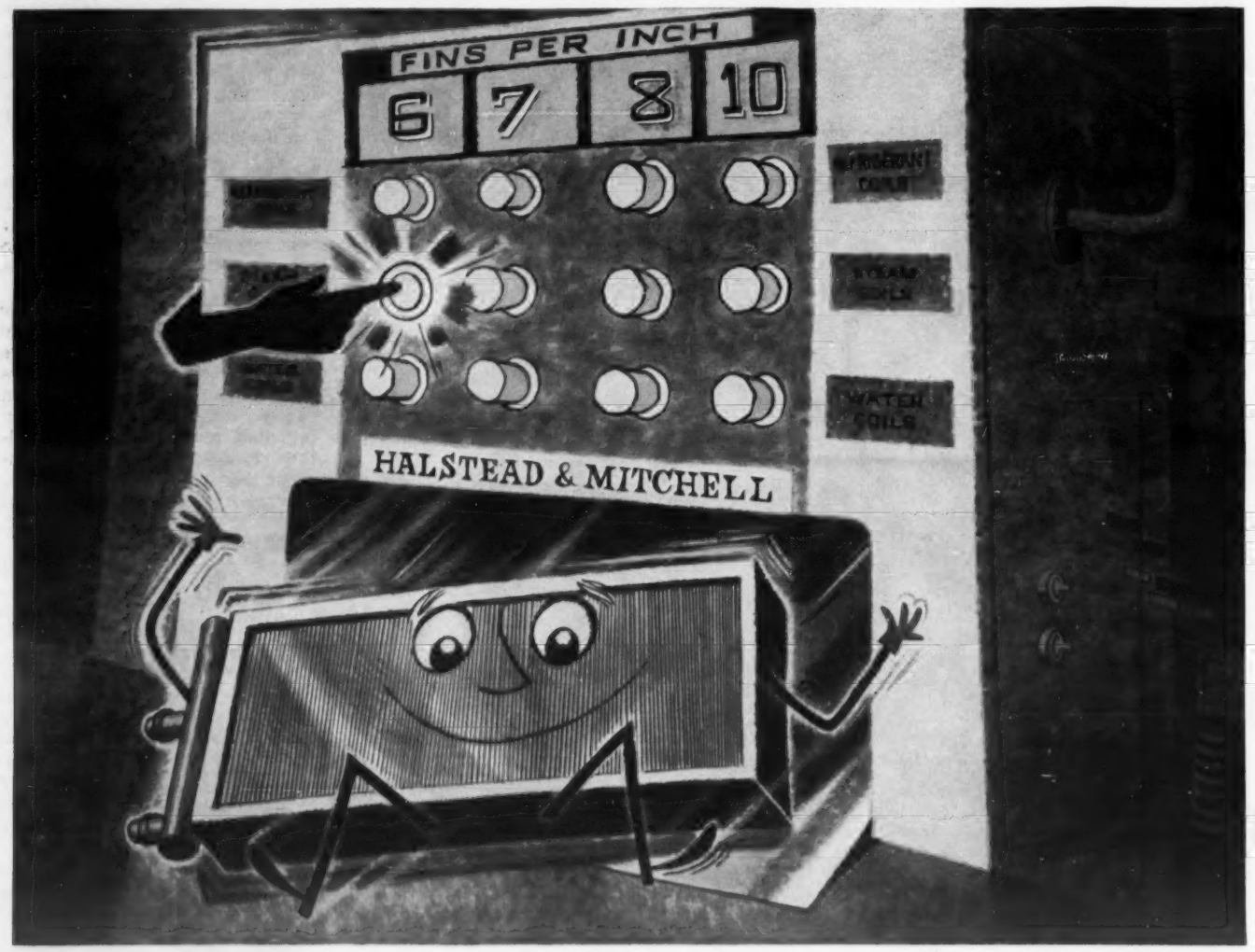
But we are speaking here, not of plastics *protecting against* corrosion but *causing* it.

According to a study made by the U.S. Navy* some plastics and rubbers in contact with certain metals in humid environments have been found to contribute to the corrosion of the metals under practical conditions. A few plastics have been found to cause corrosion at a distance within closed systems.

The report states, "Tests indicate that those plastics and rubbers which cause significant corrosion release electrolytes which can be dissolved in water films and droplets on metal surfaces in concentrations sufficient to contribute to galvanic corrosion."

Practical examples of corrosion attributed to plastics, some

*"The Corrosivities of Plastics and Rubbers," Perry, Chreitzberg, Silver, Mathews, Jr., U.S. Naval Ordnance Laboratory, White Oak, Silver Spring, Md.



BEFORE YOU BUY, THINK:

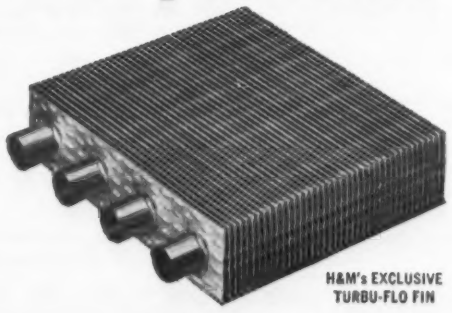
Do you need 6, 7, 8 or 10 fins per inch?

Halstead & Mitchell supplies Turbu-Flo Coils with the fin spacing you want

Why accept someone else's "standard" when your own judgment dictates another fin spacing for the specific job at hand. Now you can call on Halstead & Mitchell for Turbu-Flo coils with 6, 7, 8 or 10 fins per inch to meet your individual size requirements.

H&M makes coils for use with most refrigerants, steam (standard or non-freeze coils), hot or chilled water. All coils are available from 1 to 8 rows deep, with finned heights of 12 to 36 inches, and finned lengths up to 10 feet. Aluminum fins on seamless copper tubing are standard, though copper fins may be ordered. Casings come in heavy gauge galvanized steel or aluminum, with connections for left or right hand.

When perfect performance depends on correct design, specify H&M coils. Ask your wholesaler for complete information or write to Halstead & Mitchell, Bessemer Bldg., Pittsburgh 22, Pa.



H&M's EXCLUSIVE TURBU-FLO FIN

Halstead & Mitchell

Finned Coil Products • Air-Cooled Condensers • Water-Cooled Condensers • Cooling Towers

STOP

Losing money during your slow season-

LOOK

At how easy it is to keep your mechanics profitably employed all year repairing hermetic compressors with a FRANKELL HERMETIC COMPRESSOR OPENER. Keep your shelves filled with rebuilt units so that during the busy season you can do more jobs in less time at a greater profit. A FRANKELL HERMETIC COMPRESSOR OPENER opens any hermetic compressor up to 20" in diameter. No special jigs or skill required.

LISTEN

To the ring of profits the year 'round. Remember, when you repair hermetic compressors, the profits are big. So ACT NOW! Only $695 Ex Factory. Ask about our rental plan. Export facilities.

FRANKELL MFG. CO., INC.

1074 Home Street, New York 59, N. Y.

WRITE DEPT. S for complete information.

of which come close to home:

Switch boxes, stored outdoors, corroded at a rate far in excess of what could be attributed to the environment. Investigation revealed the phenolic material used in the plastic was responsible for the increased corrosion—under the conditions of moist exposure.

A manufacturer of electric switches found that molded phenolic parts caused many failures of metal springs and contacts by corrosion.

Silver contacts in a switch sealed with rubber-impregnated fabric were corroded. Nickel silver springs were not affected.

Metal parts in hydraulic systems were corroded due to the rubber used in gaskets and O-rings.

Numerous radio and TV manufacturers have found that vinyl sleeving and vinyl wire insulations, when heated above 100° C. (212° F.) release acidic vapors.

Numerous examples exist for the corrosion of metals due to acids emitted during the decomposition of cellulose acetate, cellulose nitrate, and other cellulosics.

Among the important conclusions of the Navy study:

"The vinyls and halocarbons appear to be capable of causing corrosion if subjected to thermal degradation." (The refrigeration industry is familiar with decomposition of liquid refrigerant halocarbons within units.)

"The most corrosive plastics, based on service experience, appear to be the phenolic molding compounds, foams, and casting resins. Those containing cellulosic fillers appear to be worse than the mineral filled phenolics.

"Chloroprene rubbers and sulfur vulcanized rubbers have caused considerable corrosion.

"Within a given class of resin or rubber, considerable variation in corrosivity may be experienced. It is recommended that the electrical conductance of water extracts from the plastics be used as a means of screening plastics and rubbers for their tendency to cause galvanic corrosion in warm and humid environments."

NEWS readers are invited to write to the editor giving their opinions on any subject of interest to the industry.

Dayton Rubber Forms New Company To Handle Industrial, Automotive Products

DAYTON — Dayton Rubber Co. has formed a new company in Chicago to handle the growing line of industrial and automotive products, C. M. Christie, president, announced.

Dayton Industrial Products Co., a division of Dayton Rubber, will establish headquarters in a building under construction in the Melrose Park area west of Chicago, Christie said. All of the activities of Dayton Rubber's former mechanical goods sales division will be incorporated in the new company, he added.

A number of executives, department heads, and key personnel are to be transferred from present headquarters in Dayton to the new location. Robert G. Burson, a vice president of Dayton Rubber, will be in charge of the new company.

The Chicago operation will be responsible for sales, advertising, sales promotion, merchandising, product engineering, and application for Dayton Rubber automotive and industrial products. These include automotive V-Belts, radiator and heater hose, industrial V-Belts, hose and hollers, friction and plastic electrical tapes, graphic arts rollers, and lithographic blankets.

Also included is the firm's new line of urethane products for a wide variety of industrial uses. There is also a full range of molded and extruded industrial rubber products.

Tenn York Supply Leases New Building

NASHVILLE, Tenn. — Tenn York Supply Corp. celebrated its second anniversary in business here by leasing a 22,000-sq. ft. building for its 19 employes, at 109-15 Eleventh Ave., S.

Ernest R. Buchi, president and general manager, said the firm's expanded lines for its "one-stop" wholesale distribution of heating, air conditioning, industrial, and plumbing supplies "can be better accommodated in the new quarters."

Tenn York Supply is moving from a 15,000-sq. ft. building at 819 Sixth Ave., S.

"With the additional space," Buchi continued, "our plant here will now make an extensive expansion of its commercial refrigeration lines."

Recony Names Engineers In Expansion Move

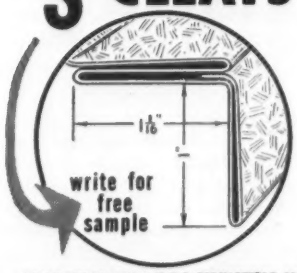
RICHMOND, Va.—In furtherence of its expansion program at Belle Isle, Richmond, the Recony Corp., together with its wholly-owned subsidiary, Old Dominion Iron & Steel Corp., announced the appointment of a new chief engineer and a new chief industrial engineer.

H. P. Peterson and Karl H. Miller were named to these positions by Andrew J. Asch, Jr., Recony president.

Peterson was formerly chief engineer of Dunham-Bush. His most recent association was with Kramer Trenton Co. as New York district representative.

Miller was formerly chief engineer of Virginia Metal Products Corp., Orange, Va. Previously, he was chief production engineer at Martin-Parry.

erect ductwork easily with
STANDING "S" CLEATS



PRICE PER 100 FEET—F.O.B. SPRINGFIELD, MO.

GUAGE	100-999 FT.	1000-4999 FT	5000 FT OR MORE	EST. WT/FT
26	$7.30	$6.50	$5.90	.453
24	9.60	7.90	7.40	.578
22	10.50	9.00	8.50	.703

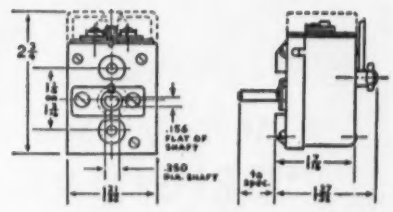
GALVANIZED — 10 FT. LENGTHS ONLY

PM
PAUL MUELLER COMPANY
P.O. BOX 150 — SPRINGFIELD, MISSOURI

Design more compact heating units with the Wilcolator Type G1 thermostat

Photo courtesy Electric Heating Division, Cavalier Corporation

Cavalier Corporation is one of several leading manufacturers of baseboard heaters who are currently using the Wilcolator G1 for thermostatic control. Small size and high capacity of the G1 result in an extremely compact, efficient installation.



Wilcolator Type G1 single-pole, remote-bulb liquid expansion thermostat

With its improved, snap-action switch mechanism, the Wilcolator Type G1 thermostat offers considerably higher contact ratings than were previously available in such a small unit (2¾ x 1⅝ x 1⅞ in.). It makes possible smaller, more efficient control panels for baseboard heaters, wall heaters, ranges, etc., which results in substantial cost savings.

Backed by over 20 years' experience in manufacturing space heater thermostats, the Wilcolator G1 provides extremely sensitive thermal response over a range of temperatures from 0-585°F. Its contacts are vibration proof and will not cause radio or TV interference. Temperature differential is adjustable and can be factory set to your specifications. Switch mechanism includes positive OFF position.

For complete information, write The Wilcolator Company, 1001 Newark Ave., Elizabeth, N.J. *In Canada:* Wilcolator (Canada) Ltd., 221 Evans Ave., Toronto 14, Ont.

SPECIFICATIONS

Temperature range: 0°F min.; 585°F max. Special temperature ranges: to your requirements

Contact rating: 30 amp, 125 and 250 volts a-c noninductive load

Standard shaft: ¼ in. diam. flatted to .156 in. Length to your requirement. Special shafts available

Dials: Standard or special dials, pointers, and chrome bezels available

Terminals: Screw type, AMP or Arkles

THE Wilcolator COMPANY

MANUFACTURERS OF LIQUID EXPANSION ELECTRIC THERMOSTATS FOR:
ELECTRIC RANGES • ROOM COOLERS • AIR CONDITIONERS • CLOTHES DRYERS • SPACE HEATERS • ROLL WARMERS • ROASTERS • FRYERS • STEAM TABLES • WARMING OVENS • RANGETTE OVENS • WATER HEATERS • BAKE OVENS, ETC. • STOCK WATER HEATERS • RESTAURANT APPLIANCES • VENDING EQUIPMENT • PACKAGING MACHINERY • PHOTO DRYERS • BLUEPRINT MACHINERY, ETC.

ALL WILCOLATOR THERMOSTATS ARE UL AND CSA APPROVED AND LISTED

Acme Offers Five-In-One Packaged Kitchen

● "Debonair," a new five-in-one "packaged kitchen," is being offered by Acme National Refrigeration Co., Inc., Dept. AH&RN, 19-26 Hazen St., Astoria 5, N. Y.

Components include the Acme two-burner "Hide-A-Way" range, a snack bar, a storage cabinet with three inner door shelves and room for bottled goods and glasses, a sink, and a table top server.

The "plus 5½-cu. ft. large-capacity" refrigerator has two inner door shelves and a 25-lb. horizontal freezer holding up to nine ice cube trays, the company said. It is claimed to produce a fresh supply of ice cubes in 56 minutes. An automatic light illuminates the food compartment when the door is open.

The Debonair is available with black satin, walnut, mahogany, and blonde finishes. If desired, it may be obtained without sink and cooking range.

Want More Details?

ADDITIONAL details on products that are described on these pages may be obtained by writing the manufacturer at the address given in each What's New story.

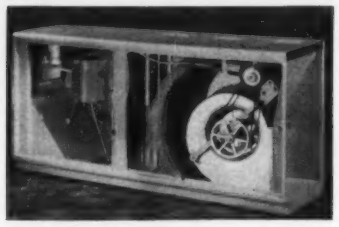
Tell him: "AH&RN sent me!"

Two-Speed Reciprocating Electric Saw Available

● Availability of a two-speed reciprocating electric saw has been announced by Skil Corp., Dept. AH&RN, 5033 North Elston Ave., Chicago 30.

The lower of the two speeds will allow users to cut metal "fast with minimum blade wear," while the higher speed will permit "extremely fast cuts" in wood, plastics, and fiberboard.

The new model 700 "Recipro Saw" combines the function of a hack saw, keyhole saw, and hand saw in a single power tool. Two features are a two-position blade shoe "which will effectively double blade life," and the off-center location of the blade "which allows cutting close to corners."

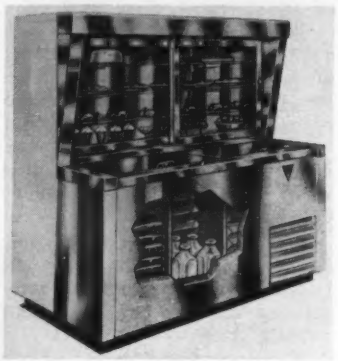


Announces Improved Air Processing Unit

● Development of a new and improved air processing unit known as the DV32-1200 was announced by Lennox Industries, Inc., Dept. AH&RN, 1701 East Euclid Ave., Des Moines, Iowa, maker of the "Comfort Curtain" system of classroom heating, ventilating, and air conditioning equipment.

This unit incorporates a new control panel and damper arrangement which will handle a substantially greater volume of air for each classroom, according to Lennox. It is also possible to use both larger and smaller capacity heating sources with DV32-1200.

A further improvement is the use of a completely factory wired and assembled control panel and damper motor assembly.



Ideal Introduces 2-In-1 Restaurant Cooler

● A new "all-purpose" restaurant cooler, which "gives the restaurant owner two fixtures in one," has been introduced by Ideal Cooler Corp., Dept. AH&RN, 2830 Magazine St., St. Louis 6.

"The lighted, refrigerated superstructure displays and cools perishables, such as pies, salads, cold dishes, desserts, etc., and a refrigerator underneath stores food, beverages, and other perishables in the same fixture."

The unit gives 27½ cu. ft. of display or storage capacity—10 cu. ft. in the tapered superstructure and 17½ cu. ft. in the cooler. There are sliding glass doors with stainless steel frame on the display case, stainless steel doors on the cooler, and adjustable wire shelving in the superstructure.

The cooler has stainless steel on the front and halfway around the sides, and the rest is baked-on enamel. The superstructure's interior is all stainless steel.

Bohn Half-Rounds keep fruits and vegetables temptingly fresh and crisp for Piggly Wiggly customers by maintaining precise control of temperature and humidity in produce coolers.

At Piggly Wiggly . . . another installation of

"ORIGINAL HALF-ROUND" BOHN EVAPORATORS

Features of the Bohn Model HR

- Built-in louvers . . . *a Bohn exclusive* . . . increase air "throw" to provide more uniform temperature in refrigerated space.
- Guaranteed full-rated performance; UL listed.
- 7 models, capacities from 260 to 1080 BTU's at 1° T.D.
- Grained aluminum housing; rust-proof fittings, built-in heat exchanger, chrome-plated fan guard with optional plastic filter.
- Double drain pan prevents sweating; hinged for easy access.
- Life-lubricated motor with thermal overload protection.

SEE YOUR WHOLESALER for latest catalogs and price lists on BOHN's *complete line* of standard unit coolers, low temperature units, and air-cooled condensers.

Bohn is proud that its Half-Rounds were selected for this ultra-modern new Piggly Wiggly store at 823 E. Murdock Avenue, Oshkosh, Wisconsin. Owner and operator is Mr. Cliff Sebora.

BOHN

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Fast-acting Molecular Sieves keep system moisture concentration to 10 ppm or lower even at 140°F, and hold acid to far below dangerous corrosion limits. Massive depth filter removes all scale, sludge and carbon as small as 10 microns. Remco Filter-Driers work equally well in the hot machine compartment or the refrigerated space. U/L Approved, working pressure is 500 psi; minimum bursting pressure, 2500 psi.

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All Remco Molecular Sieve Filter-Driers and adapter fittings have full refrigerant flow. Ask for them at your local refrigeration wholesaler's, or write for Bulletin MS-1. Remco, Inc., Zelienople, Pa.

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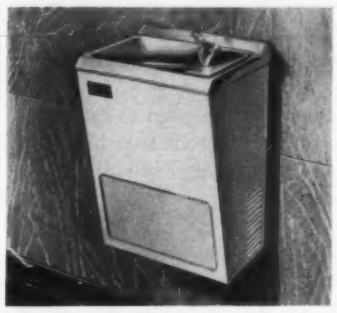


Water Cooler Has No Plumbing In Sight

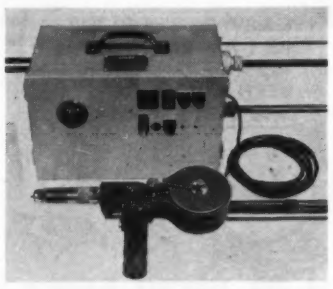
● Described as a new design-engineering concept in self-contained electric drinking water coolers, its new "Wall-Temp" model WT-13 mounts flush to the wall and off the floor, according to Temprite Products Corp., Dept. AH&RN, P. O. Box 72, Birmingham, Mich.

Plumbing is fully concealed within the cooler cabinet.

At normal 40-in. bubbler-to-floor mounting height, there is a 17-in. clearance from the bottom of the cooler to the floor, providing ease of floor maintenance at the unit, the firm pointed out. The Wall-Temp can also be mounted at any desired lower height to accommodate children within any age bracket.

The unit measures 15¾ in. wide by 13 in. deep at top—recessed to 9 in. deep at bottom. Over-all height is 24 in. The Wall-Temp delivers 13 g.p.h. of 50° water at standard ratings, according to Temprite.

Location of the bubbler at 8¼ in. from the wall is said to provide ample head room while drinking.



Torch Offers Portability, Easy Maintenance

● For consumable-electrode inert-gas metal-arc welding, its new "Sigmette" torch combines portability and easy maintenance, according to Linde Co., Div. of Union Carbide Corp., Dept. AHRN, 30 East 42nd St., New York City 17.

The wire spool mounted on the torch lets the operator get at jobs in confined spaces and areas remote from power and gas supply, it was pointed out. The torch weighs 3 lbs., the control box weighs less than 20 lbs.

Rated at 200 amperes, the torch will handle the full welding range with 3/64-in. aluminum wire; applications on aluminum .093 to ⅛-in. thick using .030-in. wire up to 125 amperes; limited applications with 1/16-in. aluminum wire; and .030-in. carbon steel wire. Torches are available for the full welding range with either .030 or 1/16-in. aluminum wire.

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Operating Costs of Residential Air Conditioning and What This Means to Dealers and Installers. By R. A. Gonzalez—25¢ each.

Mail this ad with your name and address to: Air Conditioning, Heating & Refrigeration News, 450 W. Fort St., Detroit 26, Mich.

'Zone-Air' Offers Economical Zone Control

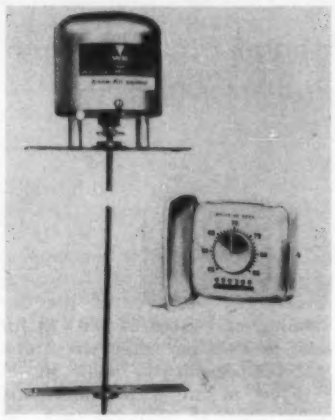
● Development of a new combination control package for zoning forced-air heating-cooling systems was announced by White-Rodgers Co., Dept. AH&RN, 1209 Cass Ave., St. Louis 6.

Called "Zone-Air," the package "delivers all the advantages of zone control, yet offers economical installation by use of simplified components and low-voltage wiring," the company said.

"Compact Zone-Air units can be installed anywhere on the ductwork of both new and existing systems. In use, one Zone-Air package is used to zone each specific area of a building, such as bedrooms, living, and recreation areas.

"Each package is composed of a low-voltage 'Fashion' thermostat and silent automatic damper motor. Where required, an 'Equalizer' damper is available to stabilize air velocities in relation to the number of zones in operation.

"On a zone thermostat's call for action, the damper motor for that



zone turns the damper vane 90°, allowing unrestricted air flow. Thermostat satisfied, the motor closes the duct. When all ducts close, the furnace burner automatically goes off until one of the zone thermostats again calls for action."

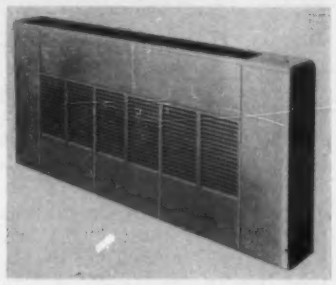
Low Pressure 'Inductor' Air Conditioners Introduced

● A new improved line of American Blower low pressure "Inductor" air conditioners for application to perimeter areas of multi-room buildings using conventional ductwork is now available from American Standard Industrial Div., Dept. AH&RN, Detroit 32.

Inductor units provide heating, humidification, cooling, and dehumidification for the perimeter areas of office buildings, laboratories, and various other multi-room structures that require relatively large volumes of air for ventilation, it was explained.

The American Blower line is available in five unit sizes: 20, 28, 36, 48, and 60—the numbers designating tube length of the secondary coil in inches. Up to 700 c.f.m. of fresh air can be supplied by each low pressure Inductor air conditioner, the division said.

Individual room control of primary air is provided by a standard indexing and locking device for fixing unit volume. This



control can be field set as required. It also can be manually operated through a remote control arrangement if desired. The secondary coil, either hot water or steam, can be controlled manually by a hand valve from the standard access door. Automatic electric or pneumatic control valves can be used, but must be installed on the job.

Low pressure Inductor coils are available with four, five, and six tubes in face, single row, in hot water and steam construction.

ends spilling, cuts emptying time in half!

Now standard on popular 5-gallon containers, this new self-venting spout makes your servicing job a cinch when you refill compressors with Texaco Capella Oil. This big packaging improvement gives you the same dependable product plus these time- and trouble-saving advantages!

Ends Spillage! Exclusive, self-venting spout lets air in as it lets Capella Oil out! Oil flows smoothly, without gulping.

Cuts Emptying Time in Half! Because of the built-in vent, oil flows out faster. You can empty the entire container twice as fast as you could with an ordinary can.

Easy to Handle! Throw away your funnel and your mop-up rag! You can lean the spout of the new Texaco Capella Oil container right on the lip of the filler hole and pour—it's strong enough to support the entire weight of the full can.

Try out the new 5-gallon Texaco Capella Oil container soon and see for yourself how its self-venting spout can cut your servicing time. And of course, Texaco Capella Oil still comes in 1-quart and 1-gallon containers for the smaller jobs. The Texas Company, 135 East 42nd Street, New York 17, N. Y.

LUBRICATION IS A MAJOR FACTOR IN COST CONTROL

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Air Conditioning a 'Titan' Launching

Complex System Must Produce Exact Atmospheric Conditions To Assure Successful Launching of Our Biggest Missile

LOS ANGELES — "Every pound of ice requires an additional 600 lbs. of thrust."

That simple statement tells the principal reason why air conditioning plays an important role in the launching procedure for the "Titan" missile, stated to be the aristocrat of U. S. intercontinental ballistic missiles (ICBM).

There is another important function of air conditioning in the launching procedure — that of keeping the electronic parts under proper atmospheric control.

But the big job of the man-made atmospheric control at launching time is to prevent the icing of the giant Titan as it is being fueled with "LOX" (liquid oxygen). Liquid oxygen is produced through the use of some of the lowest temperatures produced artificially, and in the fueling process develops a terrific cooling effect — -297° F.

The missile air conditioner is designed to dehumidify the air by cooling it to -10° F. or 40° F. as required, using mechanical refrigeration. The air is then reheated to 40° F. for use for cooling or heated to 120° F. for use in heating when the ambient temperature is below 40° F.

Flow of air is automatically controlled at 180 lbs./min. of recirculated air plus 70 lbs./min. of fresh air. A manual adjustment located on the instrument panel permits pre-selection of any other proportion of air.

The missile air conditioner is a self-contained air-cooled packaged cooling and heating system. Components were selected and arranged to produce automatically the conditions specified.

Cooling effect is supplied by a two-stage refrigerant system, composed of one 12-cylinder low-stage compressor, directly connected to a 50-hp. motor, and two 8-cylinder high temperature compressors each directly connected to a 60-hp. electric motor.

Other parts of the assembly include a 12-ton liquid cooler, a two-section air-cooled condenser mounting four 47-in., 4-blade propeller fans belted to two 10-hp. electric motors.

Prime air mover is a 60-hp. direct-drive positive-pressure blower selected to move 250 lbs. air/min. against a 40-in. water external static pressure.

The coil section includes a cooling evaporator section containing two 16-row low temperature coils and one 12-row high temperature coil together with an air diverter valve, three expansion valves, and a two-row steam heat and reheat coil. Heat is supplied by an electrically fired steam generator designed to heat 175 lbs. air/min. from -20° F. to 120° F.

The missile air conditioner can be used in a variety of ways.

As a Blower Unit

The system can be used for ventilating only, either taking all of the air used from the fresh air supply, the recirculated air supply, or a mixture of both fresh and recirculated air in proportions of 180 lbs. recirculated air and 70 lbs. fresh air on automatic control.

The system can take all of any quantity from either source by placing the air control valves in manual position and regulating the duct proportioning valves by the manual regulating valves.

As a Heating Unit

To put the heating system into operation, the -20° F. to 120° F. tumbler switch on the control panel is placed in the "On" position, and this energizes the heater control circuit. However, the air entering the system must be 40° F. or lower before the sensing thermostat in the air supply duct will complete the control circuit.

A 120° sensing thermostat in the air discharge outlet will exercise control over the heater unit to maintain a near constant temperature. A third thermostat in the steam generator keeps the steam temperature in the generator from exceeding the maximum pressure setting. A pressure relief valve is also incorporated in the generator as a safety measure.

The generator is fired by 75 kw. electric heater tubes, divided in two sections, one of 50 kw. and one of 25 kw. Each is controlled by a magnetic contactor responsive to the thermostats.

As an Air Conditioner

The system can be used to deliver conditioned air at tem-

Our "Sunday punch" is what some observers of our missiles program have called the Titan Intercontinental Ballistic Missile (ICBM).

The "Big T," as it is also known, is designed to be able to deliver its warhead any place in the world, from launching sites in this country. The 90-ft. long, 110-ton Titan is said to have a range of 8,400 miles, with the missile traveling at a speed of 15,000 miles per hour.

The two Titan engines, developed by Aerojet-General, produce 380,000 pounds of thrust. An official of one of the firms engaged in the production of the Titan has said of it:

"Substituting a satellite for the nose cone-warhead would enable Titan, in its present configuration, to launch an earth satellite weighing more than a ton. It could also place a manned satellite in orbit and, with current knowledge, return it safely to earth at will. Reconnaissance flights around the moon could be accomplished by adding stages."

The Titan missile is being produced by Martin Aircraft Co. at a plant and test area site in Colorado. Three successful test flights of the missile, covering a limited range, have been made at Cape Canaveral, Fla.

Construction is said to be starting soon on underground launching sites for the Titan missiles at Lowry Air Force Base in Colorado, and Vandenberg Air Force Base in California.

Air conditioning will be vital for the "underground missile silos" in which preparation for firing will be made, and also for the operational and control centers which are necessary to the missile base operations.

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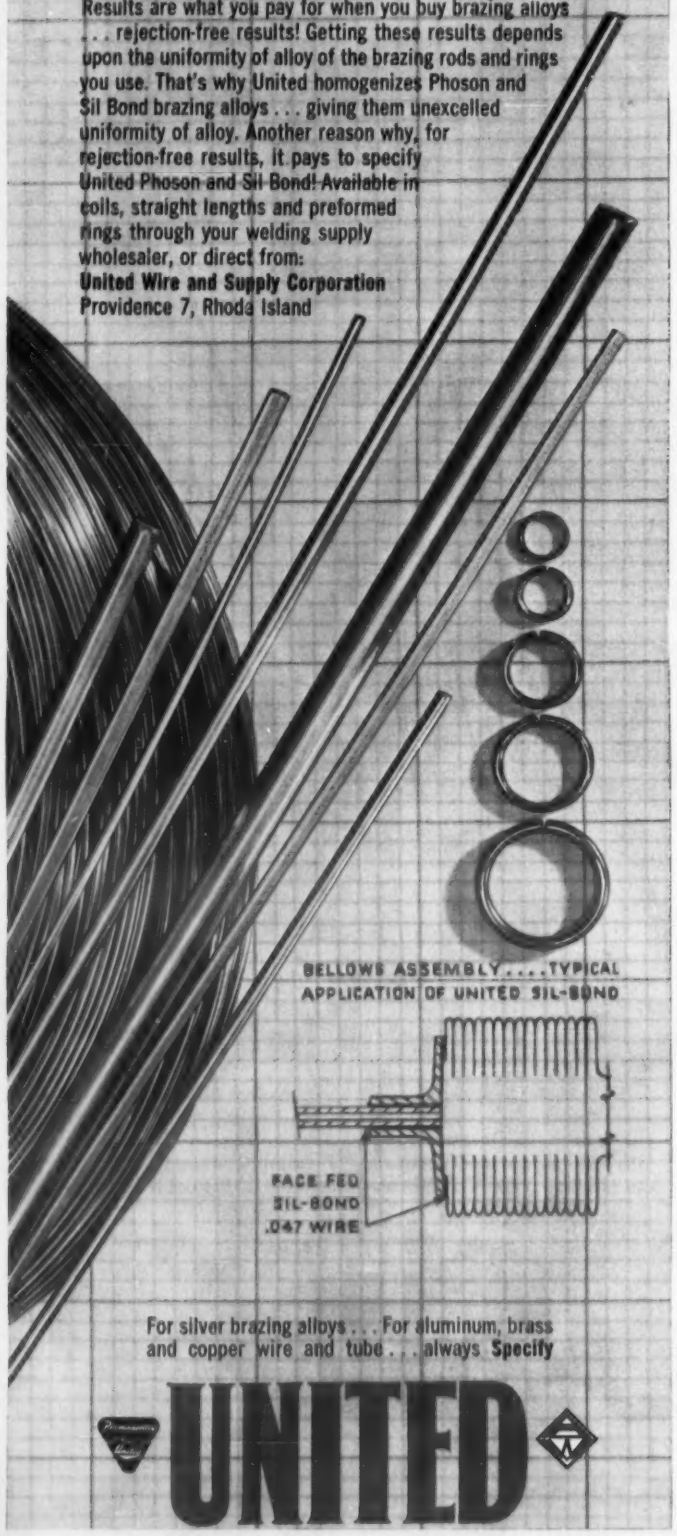

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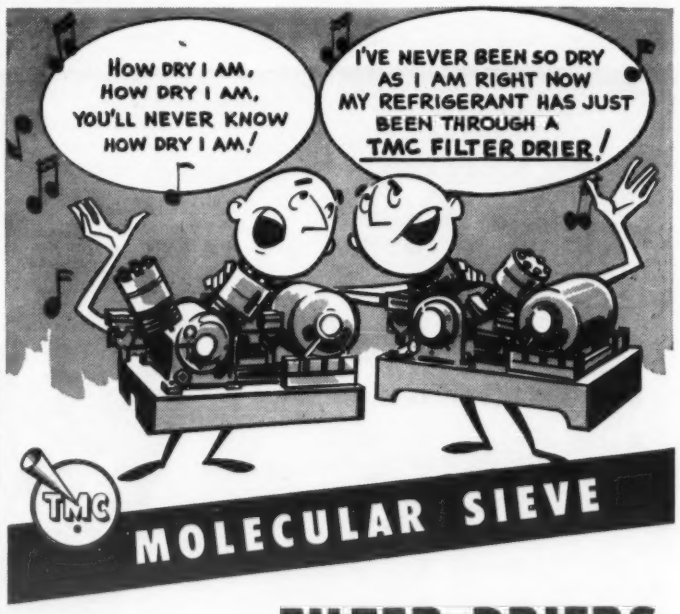
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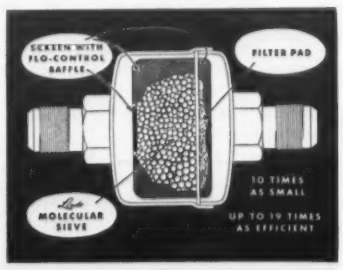

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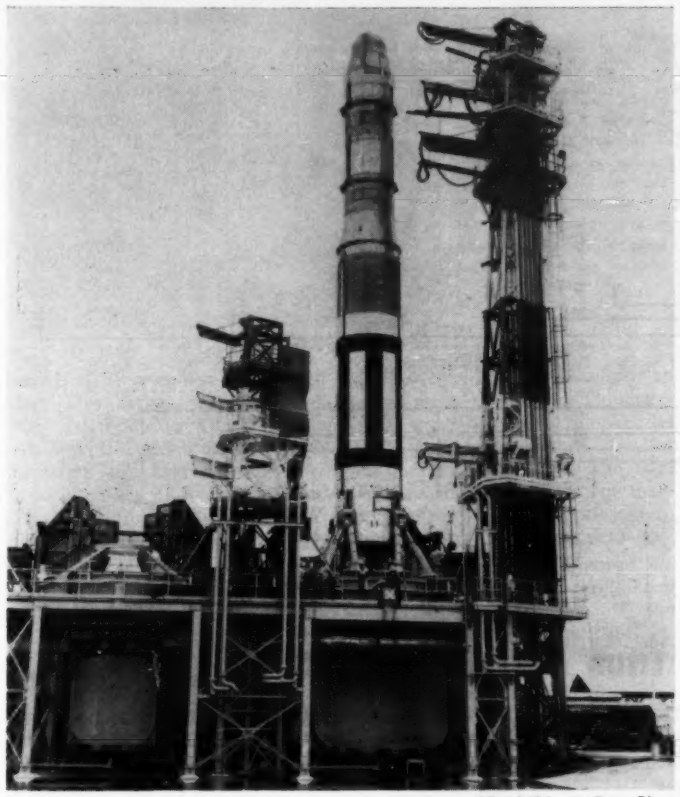
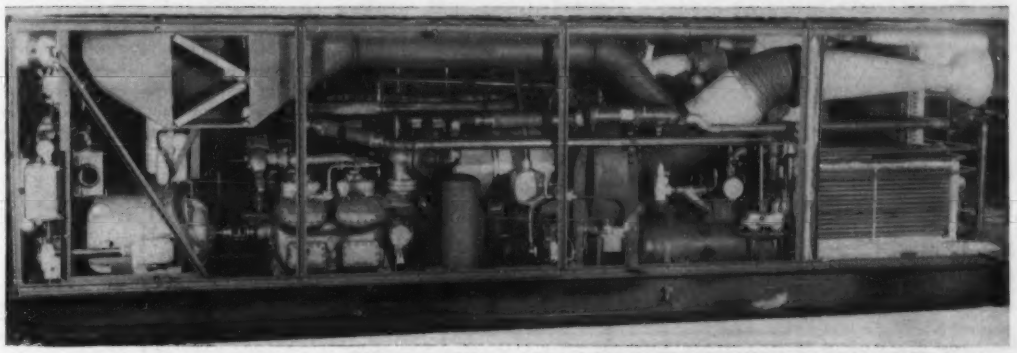
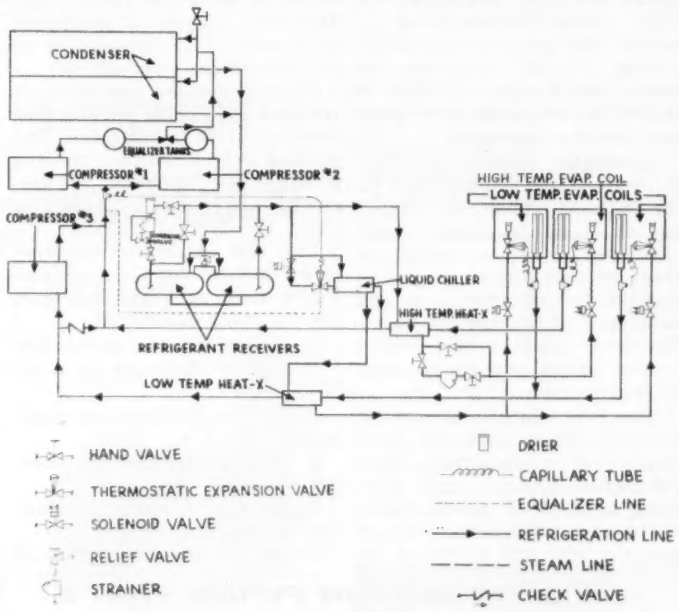


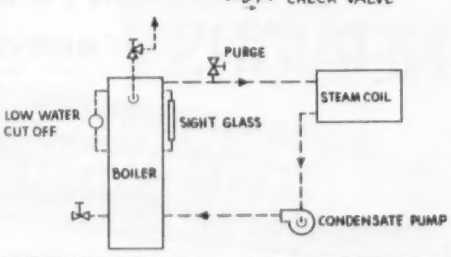
—Official U.S. Air Force Photo

This is the "Titan," newest and largest of the Air Force's big ballistic missiles, shown ready for a test at Cape Canaveral, Fla. Powered by an Aerojet General two-stage liquid rocket, it has a potential range to any place in the World from bases in the U.S. Air conditioning plays an essential role in the launching procedure in this rocket.



This is probably (up to the time it was built, anyway) the World's most complex "packaged" air conditioner. It was built by Cond-Air Div., Elliott Engineering Co., Inc., Lynwood, Calif., for the air conditioning of the "Titan" missile and was known by those who designed and built it as "the Monster." Some of the components: a two-stage refrigerant system, composed of one 12-cylinder compressor with 50-hp. motor, and two 8-cylinder compressors connected to a 60-hp. motor. A 12-ton liquid cooler. A two-section air-cooled condenser mounting four 47-in., 4-blade propeller fans. Prime air mover is a 6-hp. positive-pressure blower selected to move 250 lbs. air/min. against a 40-in. water external static pressure. Heat is supplied by an electrically fired steam generator designed to heat 175 lbs. air/min. from -20° F. to 120° F.





(Above) Refrigerant piping and valving for the complex air conditioning system used for "Titan" missile launching. (Right) Piping and valving for the steam system which forms part of the air conditioning system.

peratures above 35° F. by use of the high temperature compressors only, in which case the air leaving the apparatus will be near the saturated condition. When the air leaves the high temperature thermostat coil below 40° F., the delivered air sensing thermostat will automatically cut in the generator to maintain a leaving air temperature of 40 to 120° F.

If the air leaving the coil is above 40° the reheat coils will not respond and the delivered air will be at the temperature as it leaves the coil. This is accomplished by placing the high temperature 40° F. cooling switch in the "On" position.

Low Temperature Cooling

For low temperature cooling of the air, the high temperature coil and compressors operate in the manner described under "operation as an air conditioner." In addition, the low temperature or booster compressor is put into the system simultaneously with the liquid subcooler.

When operating in this low range, the saturated suction temperature will be in the range of -15° to -40° F. The air leaving the low temperature coil will be approximately -10° F. when the blower is delivering the selected lbs. air/min. against a total external static pressure of 40 in. water.

Four selector switches connected to an electrically operated cycle timer enable the operator to select the time the low temperature coil will be in service. At the end of the selected time interval, the time, through its control arrangement, will stop the flow of refrigerant to the presently-in-use

(Continued on next Page, Col. 3)

SIZE

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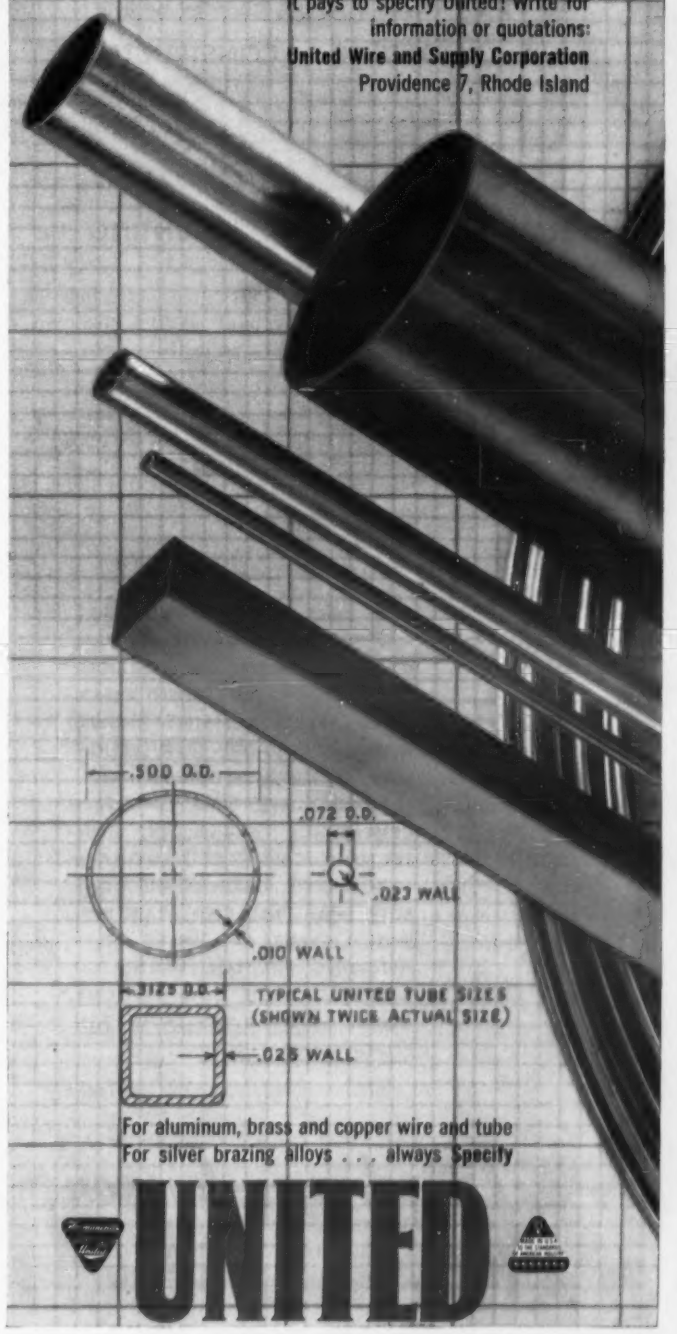

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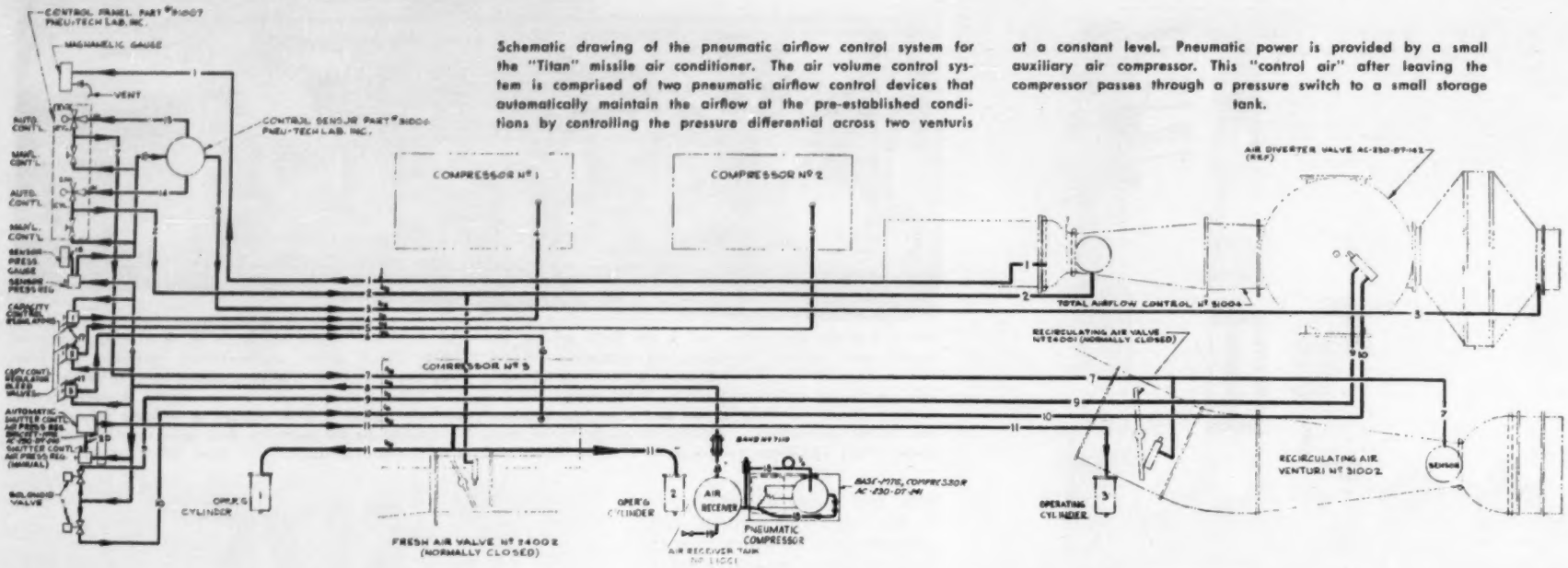

Schematic drawing of the pneumatic airflow control system for the "Titan" missile air conditioner. The air volume control system is comprised of two pneumatic airflow control devices that automatically maintain the airflow at the pre-established conditions by controlling the pressure differential across two venturis at a constant level. Pneumatic power is provided by a small auxiliary air compressor. This "control air" after leaving the compressor passes through a pressure switch to a small storage tank.

Air Conditioning for Titan Missile Launching--

(Continued from Page 27, Col. 3)

coil and direct the refrigerant to the other low temperature coil. While the first coil is defrosting, the second coil will be loading and pre-cooling.

When the cycle timer brought about this change in refrigerant flow, it energized the time delay relay, which performs two functions simultaneously.

1. Delaying the changing of the air diverter valve operating cylinder.

2. De-energizing the solenoid steam admission valve to the reheat coil.

When the time delay relay completes its cycle, the steam admission valve opens and the air diverter operating cylinder moves this valve 90°, which reverses the direction of air flow through the coils. Defrosting is rapidly accelerated by this change, as the incoming air is heated approximately 32° F. above the incoming air temperature by pressurization in the blower.

Air Volume Control System

The air volume control system is comprised of two pneumatic airflow control devices that automatically maintain the airflow at the pre-established conditions by controlling the pressure differential across two venturis at a constant level. A manual means of controlling the airflow is also provided.

Pneumatic power is provided by a small auxiliary air compressor. This "control air" after leaving the compressor passes through a pressure switch to a small storage tank. The pressure switch is installed as a means of protection for the compressor.

The tank damps out pressure fluctuations and stores air at approximately 100 p.s.i.g. Control air is extracted from the tank and routed to a pressure regulator located on the control panel. This regulator is manually set to regulate the control air to 50 p.s.i.g. and this pressure is indicated on a gauge on the panel adjacent to the regulator.

Control air is divided, one stream being directed through the pressure over-ride sensor to the selector valve, and the other stream being routed to the manual position valve. There are two selector and position valves, one for the recirculating air and one for the fresh air.

A pressure over-rise sensor is set to shut off both the recirculating and fresh air in the event of a downstream failure which causes the back pressure of the total airflow to exceed 45 in. water. This is accomplished by closing a pilot valve in the sensor which stops the flow of control air when the back pressure becomes excessive.

Automatic system operation is attained by placing each of the selector valves in "Auto" and the position valves in full "Decrease." As a result of these settings control air passes through the selector valve and is stopped at the position valve. The control air is then ducted to the airflow sensors on each of the venturis.

The two control sensors on the venturis are identical. They consist of a diaphragm type differential pressure unit operating a bleed off needle valve. When the differential pressure between inlet and throat of the venturis is low, that is, low airflow, the needle valve is closed and control air is directed to the actuator of the system valve to open it.

As the system airflow increases, the differential pressure increases causing the needle valve to bleed the control air. The system valve is positioned as a result of the modulation of the control air bleed-off rate.

Manual system operation is attained by placing each of the selector valves in "Manual." The position valves are then rotated in either the "Increase" or "Decrease" direction in order to select the desired airflow.

Into the automatic temperature regulator for this unit, the Vapor Heating Corp. has built the following functions:

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3. 35° F. delivered air regulation.
4. Inlet air temperature sensing to supply heat.
5. Inlet air temperature sensing to supply cooling.

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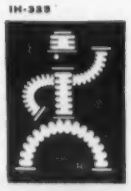
Continuous research and quality control combine with manufacturing know-how to insure a product of higher value with lower costs to you in the long run.

Genuine Flexonics Vibra-Sorbers, made only by Flexonics Corporation, are U.L. listed in sizes 3/16" through 1½" for both high and low side service. Ask for them by name. For full details write for Bulletin 139.

IH-328



Flexonics

INDUSTRIAL HOSE

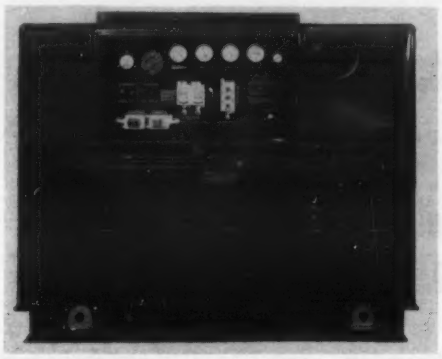
FLEXONICS CORPORATION • 1415 SOUTH THIRD AVENUE • MAYWOOD, ILLINOIS

Divisions

INDUSTRIAL HOSE • EXPANSION JOINT • BELLOWS • AERONAUTICAL • AUTOMOTIVE

Flexonics Research Laboratories, Elgin, Illinois

In Canada: Flexonics Corporation of Canada, Limited, Brampton, Ontario



Operator's control panel has starter buttons and switches for air conditioning and airflow control components, and necessary gauges and instruments to check all vital operational factors. Control arrangement is such that the system can be operated either through automatic or manual operation of the controls.

based upon a mercury thermostat. This is essentially a mercury thermometer with platinum contacts imbedded in the capillary. As the mercury rises or falls it makes or breaks an electrical circuit. The contacts are precisely set and will not change calibration during the life of the thermostat.

All control relays, with the exception of the cooling thermostat, have a 350 ohm resistor in series with the relay. The mercury thermostat is in parallel with the relay coil. When the temperature reaches the set point of the thermostat the mercury shorts out the relay coil. The relay is then de-energized.

For the 120° F. delivered air operation a switch is closed energizing this circuit. If the delivered air is below 120° F., the control relay HR 2 is energized.

This in turn closes heat contactors Nos. 1 and 2. At the same time a third set of contacts on the control relay HR 2 closes a circuit which applies a small amount of electrical heat to the thermostat.

Effect of this is to cause the mercury to make contact at about 110° F. rather than 120° F. This results in an anticipating action on the part of the thermostat preventing wide overshoots in air temperature.

Recirculating Air Operation Involves 2 Thermostats

The recirculating air operation involves two thermostats, the inlet air sensor and the delivered air sensor. The inlet thermostat has two contacts set at 35° F. and at 55° F. When the temperature is below 35° F. the relay is energized closing the circuit through HR 1 to the heater contactor No. 2.

The heat will remain on until the temperature reaches 55° F. at which time the control relay HR 1 will be de-energized. The heater contactor will remain de-energized until the inlet air again falls to 35° F.

The delivered air thermostat is set at 37° F. and cycles the heater contactor No. 1 on and off to maintain the delivered air between 35° and 40° F.

Cooling Air Thermostat

Cooling air thermostat has two contacts set at 45° F. and 65° F. Its purpose is to turn on the cooling compressors when the inlet air is above 65° F. and to turn them off when the cooling air falls to 45° F.

Three air regulating valves with bleed valves below each regulator factory set to maintain the proper suction pressure of each compressor to the design requirements.

When it is desired to use the system for conditions other than the design conditions, the capacity of each compressor can be increased or decreased to its maximum or minimum by adjusting the regulators, as each regulator controls the air pressure to its respective pneumatic cylinder unloader valve.

Safety Controls Give Positive Control and Component Protection

The safety controls are designed to give positive control and protection of all components. They include:

1. Thermal breaker on each motor, to break the circuit when overloaded. Manual on each motor starter.
2. High pressure refrigerant switch, to stop compressor on high condensing pressure. Automatic on each motor.
3. Low pressure refrigerant switch, to stop compressor on low suction pressure. Automatic on each compressor.
4. Automatic high temperature water coil, to break contacts on heaters.
5. Automatic time delay switch, to prevent starting more than one compressor.
6. Automatic low pressure oil switch, to stop compressor.

Now Representing . . .

American Air Filter Co.—R. M. TOUCEY has been appointed exclusive representative in the Pittsburgh area for Herman Nelson unit ventilator products for schools, Herman Nelson heating and ventilating products, and Illinois Engineering Div. heating systems and controls.

Toucey, formerly a manufacturer's representative, was joined by ROY SHERIFF, formerly with Robinson-Stanger, Pittsburgh, and TOM ARTHUR, from AAF's home office in Louisville. AAF also maintains a branch office in Pittsburgh for the marketing of its air filter and dust control products.

McQuay, Inc.—New sales representatives for refrigeration products are D. T. STIKELEATHER, Cincinnati; J. P. ASHCRAFT CO., INC., Dallas; and THERMAL AGENCY, Houston.

Gibson Refrigerator Co.—BROWN SUPPLY CO., St. Louis, has been named distributor of room air conditioners and dehumidifiers for the eastern half of Missouri and the southern half of Illinois.

Nitrogen Div., Allied Chemical Corp. — NORTHEASTERN AMMONIA CO., Holliston, Mass., has been appointed agent to handle sales for Barrett Brand anhydrous ammonia in cylinders throughout the New England states.

Vending Machine Div., La Crosse Cooler Co.—GEORGE FAUX of Havertown, Pa., has joined the company and will contact the bottling trade in Pennsylvania, New York, New Jersey, and Delaware.

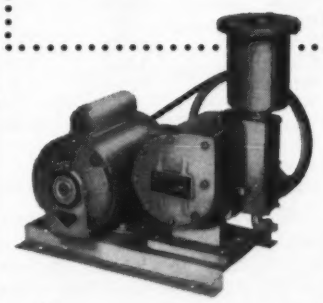
Marlo Coil Co.—Appointment of McCOMBS SUPPLY CO., Denver, as sales representative for Marlo air conditioning and heat transfer products was announced.

Gibson Refrigerator Co.—TINSLEY TIRE CO., Knoxville, has been appointed distributor in the northeast section of Tennessee.

Sterling, Inc.—RALPH C. FREY, Cleveland, has been named sales representative in the northern Ohio territory. CHARLES M. COLYER, Greenville, S. C., will represent Sterling in South Carolina.

Now!
get the reliability
of complete
dehydration
with Stokes

Compound High Vacuum Pumps



Completely removing water vapors and other condensables before introducing refrigerants stops formation of corrosive acids that will cause operating trouble and damage to equipment. These new Stokes pumps were designed specifically to give you that extra protection. All this is accomplished at room temperatures; no heating, torching or bake-out. And look at their features! Rugged, reliable industrial construction, fast-pumping, lightweight, compact, portable, quiet . . . giving you *more performance per dollar than any comparable pump!* For full information, just print your name below and attach this ad to your letterhead.

(fill in name)

Vacuum Equipment Division
F. J. STOKES CORP.
5565 Tabor Road
Phila. 20, Pa.

STOKES

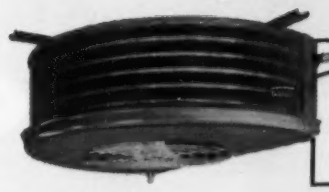
NOW!
A low-cost, lightweight "Freon" leak detector!

Pocket-sized Halide Leak Detector is the *smallest, easiest-to-use* tool available today to detect hard to find "Freon" refrigerant leaks. Just light the Halide torch and place hose at point of suspected "Freon" leakage. Even traces of "Freon" turn the light blue flame a vivid green. Each butane charger lasts 30 minutes. "OFF-ON" control. Also can be used as a blow torch, soldering tool.

Height: 6½"
Weight: 5 oz.
Chargers: 49¢ per box of 2
Price: $8.95

KIDDE MANUFACTURING CO., INC., 595 Farrand St., Bloomfield, N. J.

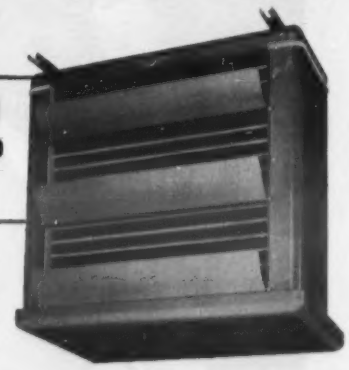
LARKIN
QUALITY ENGINEERED TO DO A BETTER JOB



HALF-TURRET HUMI-TEMP
Model HT

This forced convection unit is ideal for walk-in coolers and cold storage rooms. Available in capacities from 2500 to 10600 Btu/hr at 10° TD. Mounts flush to wall and ceiling for maximum head room and storage space. Engineered to provide 100% usage of coil surface. Has built-in heat exchanger, patented LARKIN cross-fin coil, permanently lubricated motors, fully insulated drip pan.

STANDARD HUMI-TEMP
Model MT



Available in capacities from 2400 to 32000 Btu/hr at 10° TD, which accurately balance condensing units of the same capacity. Will maintain proper temperature and humidity in walk-in coolers and many other applications. Has LARKIN cross-fin coil, insulated non-sweat drip pan, adjustable louvers, permanently lubricated motors. Easily serviced if necessary.

Hundreds of thousands of LARKIN units are in use successfully from coast to coast and in many foreign countries proving their dependability.

See your wholesaler or write for catalog 1049 B

LARKIN COILS INC.
519 Memorial Dr., S.E. P. O. Box 1699
ATLANTA 1, GEORGIA

What's Going On in Commercial Refrigeration

News of Markets, Products, Methods

NAMA Convention, Exhibit Dates Shifted To Oct. 31-Nov. 3

CHICAGO—Dates of the 1959 convention-exhibit of automatic merchandising, sponsored by the National Automatic Merchandising Association, have been changed to Oct. 31 to Nov. 3, with the exhibit opening on Saturday, according to W. T. Collett, general chairman of the annual vending convention.

Originally the dates were Nov. 1-4.

The 1959 convention will take place here, with the exhibit to be located at the Navy Pier. The Conrad Hilton will be the official convention hotel.

More than 6,000 persons are expected by NAMA at this convention and exhibit of the latest merchandise vending machines and products.

Wickham Heads Wilson

NILES, Mich.—Tyler Refrigeration Corp. announced that H. E. Wickham, vice president, has been appointed president and director of sales of Wilson Refrigeration, Inc., a wholly-owned subsidiary.

Handling School Systems During Summer Shutdown Is Topic of Bulletin

KANSAS CITY, Kan. — The recurring question of how to handle school refrigeration systems during the summer shutdown months is the subject of a paper prepared by Koch Refrigerators of Kansas City, Kan., it was announced.

The bulletin may be had without charge, in any desired quantity, by writing R. D. Bartlett, director of engineering, Koch Refrigerators, Inc., 401 Funston Rd., Kansas City, Kan.

Bulk Milk Tank Installations By States As of Jan. 1959 Listed by 2 Groups

WASHINGTON, D. C.—Final tabulations on the number of farm bulk milk tanks installed on farms in the United States on Jan. 1, 1959 have been issued by Dairy Industries Supply Association and National Association of Dairy Equipment Manufacturers.

They show a total of 117,877 installations—a 29.4% increase over the 91,096 installations reported on Jan. 1, 1958.

Here is the state-by-state bulk milk tank scoreboard:

	Installations as of 1-1-58	1-1-59
Alabama	627	899
Alaska	....	8
Arizona	470	510
Arkansas	270	515
California	4,383	4,383
Colorado	540	856
Connecticut	1,790	2,121
Delaware	60	81
Florida	875	972
Georgia	775	1,384
Idaho	291	723
Illinois	6,486	8,290
Indiana	2,550	3,158
Iowa	3,083	3,500
Kansas	1,212	1,604
Kentucky	2,051	2,541
Louisiana	1,150	2,250
Maine	1,152	1,263
Maryland	1,755	2,375
Massachusets	956	1,139
Michigan	8,000	9,000
Minnesota	6,000	7,500
Mississippi	300	687
Missouri	1,862	2,651
Montana	182	472
Nebraska	1,737	1,737
Nevada	162	153
New Hampshire	318	419
New Jersey	794	857
New Mexico	221	382
New York	3,467	5,260
North Carolina	3,000	3,850
North Dakota	260	364
Ohio	4,500	7,750
Oklahoma	964	1,650
Oregon	1,197	1,194
Pennsylvania	3,550	4,207
Rhode Island	225	267
South Carolina	566	611
South Dakota	687	976
Tennessee	800	1,325
Texas	3,500	4,525
Utah	757	937
Vermont	1,280	2,063
Virginia	1,800	2,225
Washington	3,000	3,587
West Virginia	48	61
Wisconsin	11,336	14,457
Wyoming	107	138
U.S. Total	**91,096**	**117,877**

Spokesmen for the two associations report that figures on installations in Canada, gathered for the first time this year, will be released soon.

If further data is received from various state and provincial officials, the two associations hope also to issue statistics on the sizes of tanks installed in most areas.

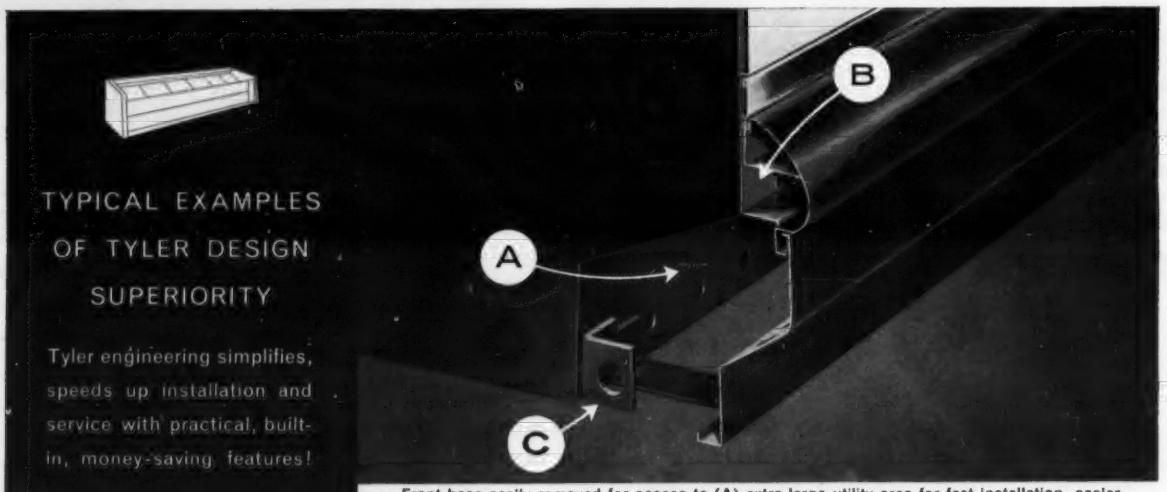
Council Appoints New Distributors

FORT SMITH, Ark. — Appointments of several new distributors for Council "Icemakers" and "Drinkmakers," recently introduced products of Council Mfg. Co. here, have been announced by Jack Ward, vice president in charge of sales.

They include Commercial Equipment Co., Birmingham, Ala.; El Paso Hotel Supply Co., El Paso, Texas; Passman Equipment Co., Monroe, La.; Hotel & Restaurant Supply Co., Atlanta; Hood-Gardner Hotel Supply, Charlotte, N. C.; Asheville Showcase Co., Asheville, N. C.; Lilie & McCall, Chattanooga, Tenn.; and Scruggs, Inc., Knoxville, Tenn.

TYLER Advanced Design saves time and money

for the Contractor, Installation and Service Man!



Front base easily removed for access to (A) extra-large utility area for fast installation, easier access to drain and refrigerant lines. Both front and rear base plates are vented to assure adequate ventilation at all times. (B) Porcelain cart bumper guard designed to serve as double electrical raceway for wiring simplicity. (C) Tru-Line Locking Device pulls cases together evenly, solidly; assures perfect, permanent alignment (base fastener shown).

(D) All electrical connections are concentrated at the right end of each Sales-Case behind easily-removed cart bumper section below Trim Panel. Connections are clearly tagged, easier to get at, quick to complete. This Tyler-designed arrangement also minimizes number of electrical "stub-ups" in the floor serving a battery of Sales-Cases.

We invite inquiries from well-rated commercial refrigeration organizations.

TYLER gives you more!

Send coupon today!

Tyler Refrigeration Corporation, Dept AR5, Niles, Michigan
☐ Send details on new Tyler ☐ Sales-Cases ☐ Air-Skreen Sales & Storage Cooler ☐ Condensing Unit Assemblies ☐ Shelving ☐ Check-outs ☐ Reach-Ins ☐ Storage Freezers ☐ Walk-In Coolers ☐ Rolling-Cold Packaging Conveyors.

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ADDRESS_____

TYLER

PIONEER of important improvements

TYLER REFRIGERATION CORPORATION, Niles, Mich.
Canada: Tyler Refrigerators, 732 Spadina Ave., Toronto, Ont.
(Export: Tyler Refrigeration International, C. A., Apartado Postal 9262, Caracas, Venezuela, S. Amer.)

KOCH upright "reach-in."

Koch Introduces Doorless 'Reach-In'

KANSAS CITY, Mo. — Koch Refrigerators, Inc. has introduced a new product for the food service field—an upright "reach-in" refrigerator that has a 100% open, doorless front.

This refrigerator "completely removes all barrier between product and customer, allowing the restaurant operator to use supermarket merchandising techniques and methods," the company stated.

"This is the first item in an entirely new line of equipment that Koch has been developing to fit in with some of the new ideas in merchandising and efficient operation that are beginning to appear in new restaurants."

Koch engineers, the announcement said, "have developed an ingenious application of the 'air curtain' principle that seals off the front of the cabinet, blankets the product in cold air, and keeps it at standard commercial refrigerator temperatures."

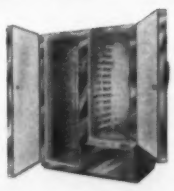
Among the applications of this illuminated refrigerator according to Koch, are:

As a "true life" menu, "where the product itself rather than the printed word stimulates and helps the customer select his meal"; as a self-service dispenser for salads; as a dining room refrigerator which would be a step and motion saver for waiters; as a supermarket type merchandiser, particularly in coffee shop type restaurants, to stimulate impulse buying of salads, pastries, etc.

Shelving in this new line of refrigerators is adjustable both as to height and to slope, with each shelf being adjustable and removable. The cabinet is offered in a wide variety of colors and finishes and with either contrasting or matching trim around the display opening.

Full specifications and pricing will be available within the next few months.

BAKER'S FREEZER



Howard manufactures a complete line of commercial refrigerators and freezers. Priced right, provides more daily sales and profits.

Territories for distributors and manufacturers' agents.

For a free Master Catalog write to Dept. N,

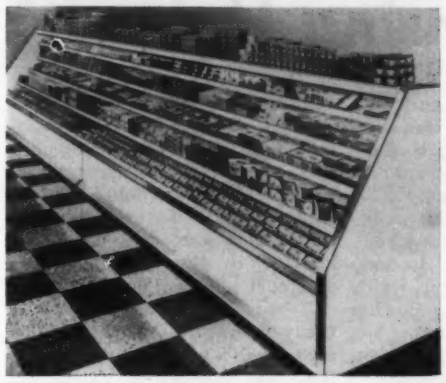
Howard Refrigerator Co., Inc.
4745 Worth St., Philadelphia 24, Pennsylvania

McCray Case Has 5 Refrigerated Shelves

KENDALLVILLE, Ind. — A new and exclusive dairy case with five refrigerated shelves has been announced by McCray Refrigerator Co., Inc.

The merchandiser features 81 sq. ft. of refrigerated display in 12 lineal feet and "provides the extra space needed to take advantage of the many new, high profit dairy items being introduced in great numbers," the company said.

"Four of the five refrigerated shelves are easily adjustable on 1-in. centers and all five are removable, affording complete flexibility of display. The top refrigerated shelf is only 56 in. above the floor so that every inch of merchandising area in this fixture is easy to reach and to stock. Each of the five shelves is fully refrigerated."



McCRAY dairy case with five refrigerated shelves. Four of the five shelves are easily adjustable on 1-in. centers.

Other features include fluorescent lights under the top of the case and the upper three shelves, and 2-in. multiple tag moldings on the case top and the front of each shelf.

Interior display area and all of the wall shelves are aluminum finished in white baked enamel. The bottom shelves are heavy duty proseal tinned wire and can be adjusted individually on a 7-in. ladder.

Easily removable aluminum floor panels give access to the drain and simplify cleaning, it was pointed out. Removable plates on the back panel give access to fans and fan motors.

They are available in 8 and 12-ft. lengths.

McCray has also made available another new dairy merchandiser with four refrigerated shelves. It has an over-all height of 56 in. and has all the merchandising and refrigerating features of the five-shelf case.

Weber Net Income Rises To $441,286 In 1958

LOS ANGELES—Net income of Weber Showcase & Fixture Co. in 1958 rose to $441,286, equal to 97 cents a share, from $83,308, or 14 cents a share, in 1957, it was reported.

Sales totaled $34,480,607, against $30,375,852 the previous year.

Here's SCOTSMAN'S

Big Plus

☆ National Ads in every Ice Machine Market

☆ A Tremendous Direct Mail Program to Reach Every Prospect

☆ Hard Hitting Local Ad Programs to Boost Your Sales

☆ Sales Promotion Campaigns . . . Publicity . . . Sales Aids of Every Description!

TO HELP YOU SELL SCOTSMAN ICE MACHINES!

THIS KING SIZE PROGRAM BUILDS KING SIZE PROFITS!

It takes less time, less work to sell SCOTSMAN Ice Machines. Here's why—SCOTSMAN Distributors and Dealers are backed by promotion programs that work for you all through the year!

You benefit from hard selling, factual ads specially tailored to every ice machine market . . . publicity appearing in a wide range of business magazines . . . a huge direct mail program that brings live SCOTSMAN prospects right to *your* mailbox. *Plus* a powerful portfolio of sales aids to build your SCOTSMAN volume.

WHY WAIT? Join the SCOTSMAN parade of profits by sending in the coupon below. It pays to sell SCOTSMAN—the leading ice machine line and biggest profit producer!

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Queen Products Division, King-Seeley Corporation
205 Front Street, Albert Lea, Minnesota

Machine Room Design for Air-Cooled Condensing Units (1)

"The day of the air-cooled condensing unit in supermarkets is returning," according to C. A. Hinkley, applications engineer and educational director, Tyler Refrigeration Corp., Niles, Mich.

Discussing oversized air-cooled condensers and their use in properly designed ventilated machine rooms before a meeting of the Refrigeration Service Engineers Society, Hinkley covered specific points like air volumes and velocities, machine placement, and control systems.

This two-part article presents the RSES talk, edited for publication.

The growth and expansion of commercial refrigeration in recent years has been affected materially by the phenomenal growth of the retail foods industry. Years ago, perhaps 10 to 15% of the selling area of the store might be devoted to the display of refrigerated merchandise.

Nowadays, however, refrigerated display equipment occupies some 40 to 50% of the sales area, and the machine under the meat cutting table has been dignified with a room of its own. A single condensing unit is no longer capable of handling the entire job, and refrigeration in these stores has become so complex that it is at present a rather specialized field, employing a technology all its own.

For many years, the air-cooled condensing unit has been widely used, but, partly because of design limitations and operating cost factors, it has gradually been replaced by the more efficient, more economical water-cooled condensing unit. Recently, depletion of natural water supplies and industrial pollution of our natural waters, has again concentrated interest on air as a condensing medium.

The modern supermarket, with its multiple refrigeration systems and its batteries of condensing units, warrants serious thought and discussion about the practicality of air-cooled units in a totally enclosed machine room. Can the enclosed area be satisfactorily ventilated?

Many new factors have been introduced into the development of condensing units, particularly influencing air-cooled unit design, which, in the past has been affected by available area allotted to the machine room and cost.

Because of these limitations many operators desiring to use air-cooled condensing units have had no alternative except to consider remote air-cooled condensers. Unfortunately, those who are associated with the operation of food stores and the installer of refrigeration equipment face numerous disadvantages in this type of installation. For example, the remoteness of a component of the condensing unit results in undesirable divided responsibility.

Invariably low ambient temperature during certain seasons of the year results in operating problems, such as the necessary periodic readjustment of controls, variable machine capacities, etc. Expensive excess refrigerant charges are frequently required and finished installation costs are relatively high.

2 Things Vital In Machine Room Design

The capacity of any condensing unit varies with the temperature of the condensing medium, whether it be air or water. The colder the medium temperature the lower the capacity of the unit. So consideration of this basic law requires that two things be accomplished in the design of the machine room:

1. Fresh air must be constantly supplied to the area so that air entering the condenser never exceeds the outside ambient temperature.

2. Adequate exhaust must be provided and a control system devised so that all of the heat rejected by the condenser, during periods of high outside ambient, will be removed from the area, and during periods of low outside ambient temperatures, some of the heat rejected by the condensers can be used to warm the air entering the condenser, thereby maintaining the capacity of the machine at satisfactory level.

The refrigeration effect that a given unit can deliver during the colder seasons when outside temperatures are low is directly in conflict with the requirements of a display refrigerator. The water-cooled machine with an automatic water regulating valve has a constant capacity regardless of the temperature of the condensing medium. This is, obviously, the ideal situation.

The capacity of an air-cooled

A COMPLETE, SIMPLE METHOD FOR
PREVENTING SCALE CORROSION SLIME
IN AIR CONDITIONING SYSTEMS

*METRO EZ TREAT

CONVENIENTLY PACKAGED IN DISPOSABLE FEEDER-CANS

THROW THESE ALGAECIDE TABLETS INTO PAN WATER
METRO EZ TREAT
3-IN-ONE TREATMENT
METRO EZ TREAT
3-IN-ONE TREATMENT
FOR SCALE, CORROSION AND SLIME IN COOLING TOWERS AND EVAPORATIVE CONDENSERS
JUST PLACE THIS FEEDER-CAN INTO PAN OF EVAPORATIVE CONDENSER OR COOLING TOWER

Now you can eliminate the trouble and fuss ordinarily involved in a complete treatment of smaller air conditioning systems.

Metro EZ Treat is a one-package treatment with triple chemical action to prevent scale, corrosion, and slime. Protects your expensive equipment all season long.

Metro EZ Treat is the answer for owners and operators of 5-to-50 ton units who want an effective, easy-to-use water treatment complete in one package.

See our representative in your area or write us for complete information.

*TRADE MARK

NO ELABORATE FEEDING OR TESTING EQUIPMENT NEEDED!

METROPOLITAN REFINING CO., INC.
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Metropolitan Refining Co., Inc.
P.O. Box 70, Long Island City 1, N. Y.
Gentlemen:
☐ Please send me complete information on Metro EZ Treat.
☐ Please send me complete information for treatment of larger air conditioning systems.

Name.....
Address.....
City.....Zone.....State.....
Att.....Telephone No. .....

Your Customers' Best Buy. . .
(and yours, too!)
IDEAL Speed-Freeze PRODUCTS

BEVERAGE COOLERS
unexcelled storage capacity with Ice Cube Makers
OUTSTANDING SECTIONAL METAL WALK-IN COOLERS

IDEAL COOLER CORPORATION
2830 MAGAZINE ST.
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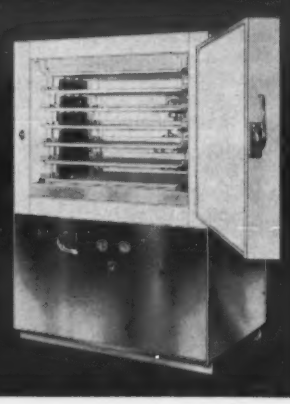
NEW! COMPACT, SELF-CONTAINED DOUBLE CONTACT FOOD FREEZER!

DOLE Freze-Cel
MODEL 2735-6
THE ANSWER FOR THE SMALLER OPERATION



6-Station unit: 240—5" x 4¼" packages per freeze . . . all refrigeration and hydraulic equipment self-contained . . . uses R22 refrigerant . . . only 17 sq. ft. of floor space required . . . patented DOLE "Thermo-Film" feature increases freezing speed up to 10% . . . installation requires only electrical, water and drain connections.

DOLE REFRIGERATING COMPANY
5920 NORTH PULASKI ROAD, CHICAGO 46, ILL.
103 PARK AVENUE, NEW YORK 17, N. Y.
Canada: Dole Refrigerating Products Limited, Oakville, Ont.

condensing unit varies widely from the fixture requirements when the supply air to the condenser is allowed to change with the outside air temperatures.

With a controlled machine room temperature and adequate ventilation, a compromise situation is possible where the capacity balance between the machine and the case equals that of a remote air-cooled condenser and even approaches that of a water-cooled machine.

Design Machine Room With Fresh Air Opening

The simplest method of satisfying the requirement for adequate fresh air supply to the condensers, is to design the machine room with an opening of some sort, through which fresh air can be brought in required quantities at desirable velocities so that it passes through the condensers and is exhausted from the compressor side at a rate high enough to assure complete removal from the area of all the heat rejected by the condensers.

Air velocity through the opening should be limited to not more than 500 f.p.m. to gain the highest level of efficiency from the condensers.

In the design of the condensing unit the face of the condenser must be toward the entering air stream. Here the condensing unit designer naturally leans towards larger condenser heat transfer surface, and the fact emerges that the unit must be designed for a specific purpose.

It takes a battery of condensing units, and in a machine room designed for air-cooled application the condensing unit must be designed so that several of them, rack mounted, can be installed in line with condensers all facing in one direction. Because of space restrictions, the base of the condensing unit or the stand itself must occupy as little area as possible. Accessibility of all components is no small consideration.

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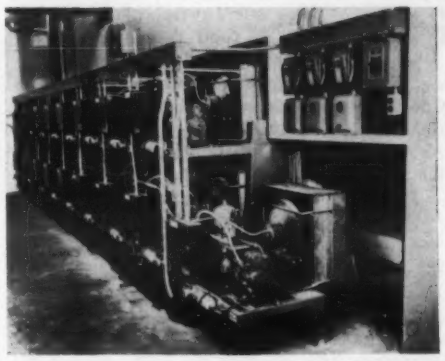
Oversizing Condenser Ups Machine Capacity

I mentioned extra large condensers as one of the conclusions drawn from a consideration of all the desirable compromises for this type of installation. When an undersized condenser is used on any condensing unit, the compressor capacity is materially reduced. Oversizing the condenser increases the machine capacity.

Instead of building a condenser with 100 to 150 sq. ft. of surface area per compressor horsepower suppose the condenser was enlarged to 150 or 200 sq. ft. of surface per compressor horsepower. Under identical test conditions, there would be an approximate 30 to 35% increase in condensing unit capacity.



VIEW of Super-Air cooled condensing units mounted on designed racks in supermarket machine room.

The Tyler Super-Air cooled condensing unit is designed along these lines. The condenser is approximately 50% oversized and the condensing unit capacity is not far from that of a water-cooled machine.

The second basic consideration in our machine room design is adequate ventilation or exhaust. The exhaust should be based on the movement of 1,000 c.f.m. for each compressor horsepower in the machine room. In temperate areas of the country where there is little difference between outside temperatures in summer and winter little more need be said about air-cooled machine room design except that stationary burglar proofed louvers should be provided, with screening for protection against leaves and other debris.

But in those areas where winter conditions vary considerably from summer some special considerations must be made. For instance, when the temperature of the fresh air supply to the condensers falls much below 70°, reducing the capacity of the condensing unit, it then would be desirable to reduce the amount of heat being removed from the room by the exhaust fan, and recirculate it through the condensers, so that the supply air temperature can be kept above 70°.

(To Be Continued)

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CRMA Members See '59 as One of Best

(Concluded from page 1)

ment in individual manufacturer's profits, dependent on the ability to increase efficiency of operations without curtailing product quality.

Average profits, it was brought out, have been somewhat less than satisfactory for the past several years, with the result that the buyer of refrigerated fixtures is and has for some time been getting a better bargain with such equipment than with anything else he buys, industry members believe.

CRMA's president, William Fogel, Fogel Refrigerator Co., was chairman of each of three general discussion sessions, including a special conference of the group's recently formed food service equipment section. Members of a special panel responsible for evaluating the industry's volume expectations were Roger D. Jacobs, The Warren Co.; William B. McMillan, Hussmann Refrigerator Co.; and H. D. Thompson, vice president-general manager, Piggly Wiggly Corp.

Their findings were supplemented by a critique of credit and financing policies by Mark Allen, treasurer, Weber Showcase & Fixture Co., and Lester O. Bower, executive vice president, Sherer-Gillett Co. Both men agreed that although the still substantial supermarket boom, along with the current emphasis on the so-called bantam or superette type of small food outlets has had a tendency to increase risks as well as intensify pressure for lower down payments and longer terms, the industry generally is observing its conservative policies.

The substantial profits being made in food retailing are attracting many highly speculative promotional schemes, the two executives cautioned, with the result that applications for credit or financing should be scruntinized with especial care.

Another panel directed its attention to the ever more complicated problem of negotiating fair labor settlements and subsequently trying to offset the inevitable added costs. Members of the panel were John R. Caulk, Jr., executive vice president, Hussmann Refrigerator Co.; Glennon J. Doyle, vice president, C. V. Hill & Co., Trenton, N. J.; and W. M. Mayo, vice president, The Warren Co. Each was of the opinion that if the unions "go easy" on direct wage increase demands, they can be expected to bear down on further fringe benefit concessions, with the result that every manufacturer must be resigned to labor's receiving a bigger share of every sales dollar for a long time to come.

World Trade Outlook

A discussion of the industry's foreign trade opportunities was led by Robert L. Tyler, president, Tyler Refrigeration Corp., who had recently returned from a fact-finding trip to Australia. He reported that due to the disproportionately high cost of shipping such bulky items as display cases and the long distances involved in delivering U. S.-made equipment, the most practical way to take advantage of the increasing overseas demand is either through licensing agreements or establishing foreign plants.

The discussion showed that a number of manufacturers have worked out licensing agreements within the past several years, in England, Australia, France, West Germany, and Mexico and U. S.-owned plants are now operating in West Germany, Colombia, and Canada. There is a pronounced interest in American food retailing methods, particularly self-service, throughout Europe and Latin America, Tyler said.

Among other developments receiving attention in the meeting was a movement among public health officials to legislate codes requiring operators of frozen food cases to maintain prescribed temperatures.

Consider Educational Program for Stores

Although the pressure to try to "insure" that frozen foods will reach the dinner table in satisfactory condition via the code route has been considerably lessened by a realization that the cause often lies elsewhere in the processing and distribution cycle, such as during delivery from packer of warehouse to the retailer, it was agreed that it would be in the public interest for CRMA to launch an educational program designed to encourage store owners to operate their equipment properly.

It was pointed out, for example, that no matter how efficiently a fixture is designed to operate, conditions beyond the manufacturer's control can, and sometimes do, cause trouble. Often, when these factors are called to the store operator's attention, such as drafts, poorly placed overhead lighting, failure to observe the "load line," etc., or even the simple matter of periodically cleaning the condensers, they are overlooked or ignored altogether.

Another, and frequently, a prime cause of fixtures failing to give good results, the discussion brought out, stems from improper sizing of condensing units by installation contractors, some of whom pass over the manufacturer's recommendations on the theory that "we know better." By enlisting all interested parties in the projected educational effort, the group felt that this problem could be materially minimized, and it was unanimously voted to proceed accordingly.

Fogel appointed the following committee to make a study of the situation, through consultation with food retailers, frozen food packers, and the commercial refrigerator distributors: chairman, C. V. Hill, president, C. V. Hill & Co.; John R. Caulk, Jr.; Joseph W. Krall, president, McCray Refrigerator Co.; Roger D. Jacobs; and Robert L. Tyler.

Demand for food service refrigerators which reached a new high in 1958, should continue to show a steady increase, according to a report on the meeting of the food service equipment section by Edward N. Northey, president, Herrick Refrigerator Co.

Among the factors responsible, he said, is the continuing extensive construction of new hotels, motels, schools, and institutions, coupled with a keen desire among food service operators generally to improve meal quality and to conserve labor cost through "portion control" and other time-saving techniques.

New Applications Being Devised

Northey told the group that in this process new applications for refrigerated food service equipment are constantly being devised, and he urged the manufacturers specializing in this field to keep abreast of them at all times, reminding them that the restaurant or other food service fixture today is no longer "just a refrigerator," but is a working tool essential to the profit-making ability of the operator.

For the past 20 years, every CRMA spring meeting has featured a "guesstimating" contest, in which the members attempt to forecast the industry's total volume for the ensuing year. When the 1958 ballots, as submitted a year ago, were tallied at the close of the meeting, it was found that McCray's Robert M. Candler had qualified for the top honor with a forecast that came within 3/100 of 1% of the actual figure.

Second prize went to Charles H. Chadwell, of Friedrich, for a near miss of 1.3%, while H. M. Beckwith, of Herrick, was in third place with one of 1.4%. An examination of the individual ballots showed that, as in previous years, the sales executives are usually over optimistic, while the men concerned with production or financial operations are inclined to understate actual performance. This time, however, with all participants' forecasts averaged together, the combined margin of error was under 5%, a new record for accuracy.

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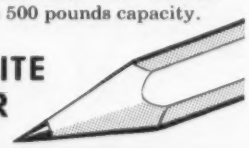

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Refrigeration Problems
And Their Solution
(As Written by Paul Reed)

Water Control Valves with Tower? (3)

REDUCING THE WETTED SURFACE OF THE TOWER

The method of cutting off the fan and thus reducing the amount of air circulation through the tower is not applicable to natural draft towers. There is a method that can be and has been used successfully with natural draft towers.

This method reduces the capacity of the tower, that is, raises the temperature of the water from the tower, by reducing the amount of water to the tower, instead of reducing the air circulation.

Most cooling towers, whether the forced draft or natural draft types, have two or more branches of the spray tree. A tee is installed in one of the branches of the spray tree and a valve attached to this tee. From this valve a line is run to the water pan of the tower.

When the valve is opened, the water to the branch of the spray tree to which the valve is connected, is by-passed to the water pan and no water is sprayed from the nozzles of that branch. Consequently, the effective wetted area and the capacity of the tower are reduced, so the water from the tower will be warmer.

Some care must be used in adjusting the restriction of the by-pass line from the branch of the spray tree to the pan. Without some restriction, the water pressure in the other branch or branches of the spray tree will be so low that their spray nozzles will not function properly.

If the valve in the by-pass line is a hand valve, it can be regulated to rob the one spray tree of water but leave enough water pressure in the other branch or branches.

THERMOSTATICALLY CONTROLLED BY-PASS

Instead of a hand valve that has to be opened and closed manually to regulate the water temperature of the water from the tower, an electric solenoid water valve can be used, actuated by a bulb type thermostat with its bulb in the water in the pan of the tower.

This thermostat should be of the type that closes on a reduction of temperature and opens on a rise of temperature. This is a "heating type" thermostat and just the reverse of the thermostat usually used in refrigeration work that closes on a rise in temperature and opens on a reduction of temperature.

The thermostat should be set to maintain a temperature of the water in the pan that is necessary to reduce the capacity of the condensing unit to more closely match the heat load.

On some cooling towers it may be necessary and practical to provide by-pass lines, each with an electric solenoid valve and thermostat, to two branches of the spray tree, with one thermostat set for a somewhat higher water temperature than the other.

Since the electric solenoid valve cannot be modulated so as to adjust the restrictive effect of the by-pass, the line from the valve to the pan should be small enough in diameter to provide the necessary restriction. Copper tubing of ⅜-in. o.d., wound into a close coil can be used to advantage.

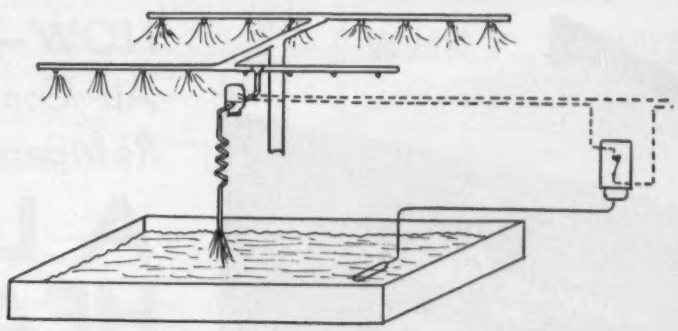

FIG. 1—Thermostatically controlled electric solenoid valve in by-pass from one branch of spray tree to water pan on cooling tower.

It must be pointed out again, that despite the use of water control valves on the water-cooled condensers or means of raising the water temperature of the water from the cooling towers, the heat load on the condensing unit may be so low in fall and spring that the suction pressure and evaporator temperature will be so low that the evaporator will frost up.

If this is true, means must be employed to further reduce the capacity of the condensing unit to match the reduced heat load. Such means include two speed motors, lifting one or more suction valves of the compressor, by-passing two cylinders of a four-cylinder compressor, by-passing from the hot gas discharge to the suction line and other suggestions that are outlined in Chapter 25 in Volume J1 of "Refrigeration Problems," entitled "Varying the Capacity of a Condensing Unit."

Norge Sets Up National Service Training Center In Muskegon, Mich.

CHICAGO — A new national home appliance training center has been set up by the Norge Div. of Borg-Warner Corp. at Muskegon, Mich.

The new center will serve three servicemen groups simultaneously, up to 400 individuals a month and yet specialize in small group instruction, said Elmer G. Fenton, Norge director of national service.

George Kipling, Norge national service training supervisor, will be in charge of all operations of the center, it was stated.

The center occupies 1,800 sq. ft. and includes a classroom, unit tear-down area, and an installation-and-operation service area.

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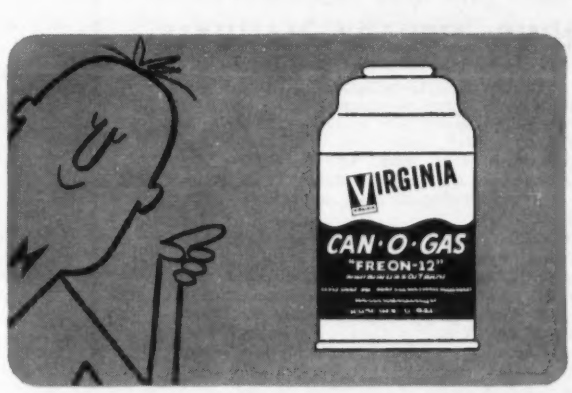

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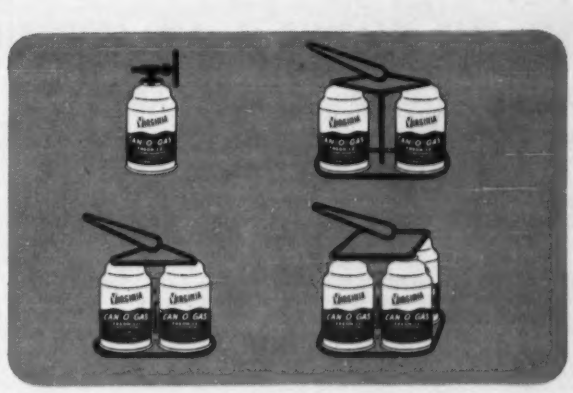
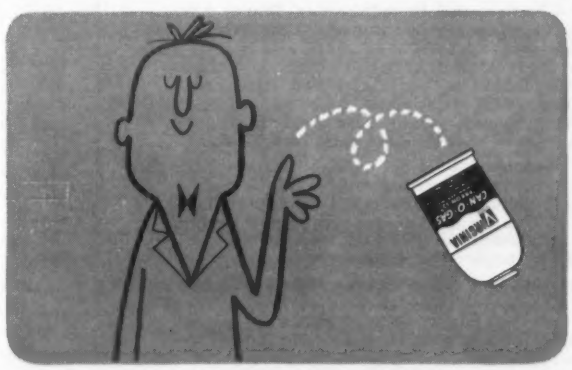


"Freon" in a wide variety of preweighed charges is available. Convenient opening devices can be obtained from "Virginia" which will dispense the contents of one, two or three cans simultaneously. Because critical charges are accurate to ±4 grams, Can-O-Gas is ideal for dependable field service.



"Freon-114" and sulfur dioxide are available in 16-oz. cans, "Freon-12" in 15-oz. cans, "Freon-22" in a 2-lb. size and in a new "Virginia" container, a 14-oz. seamless aluminum can. "Virginia," as national sales agent for Du Pont refrigerants, also distributes "Freon" refrigerant in popular cylinder sizes.

Service and maintenance men rely on "Virginia" Can-O-Gas refrigerants for charging water and beverage coolers, freezer cabinets—and for charging automobile air-conditioning systems. For details, write Refrigeration Division, VIRGINIA SMELTING COMPANY, 134 Jefferson St., West Norfolk, Va.

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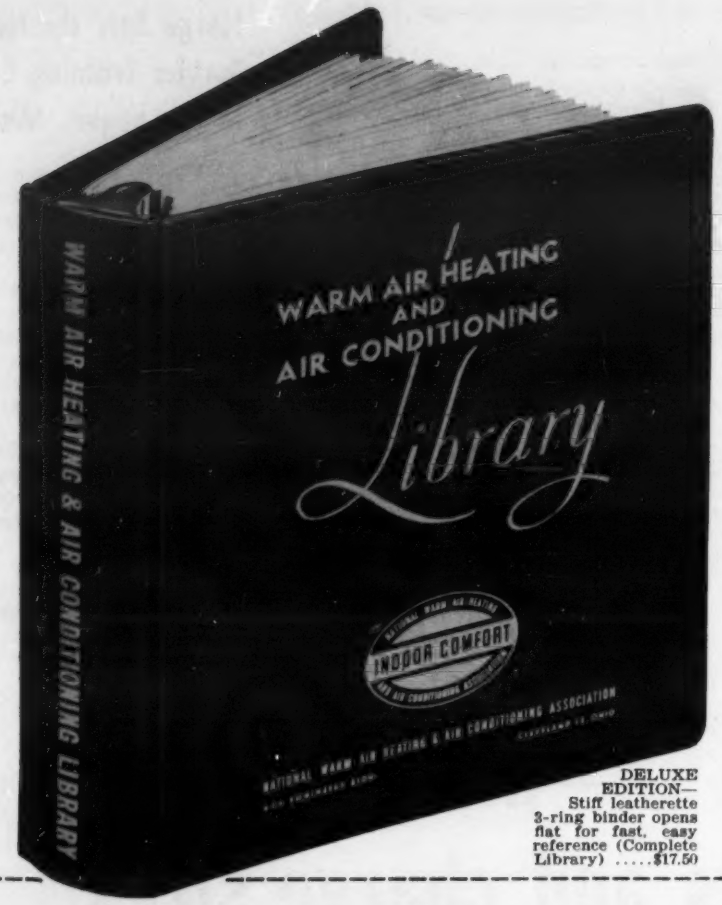
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NAPC Program for Miami Convention--

(Concluded from Page 1, Col. 3)

vention include Jerome D. Fenton, former general counsel of the National Labor Relations Board; Peter T. Schoemann, general president, United Association of Plumbers & Pipe Fitters (AFL-CIO); Dr. Norman Vincent Peale, noted religious leader who will be keynote speaker; and Sen. Jennings Randolph (D., W. Va.).

Another convention feature will be a series of panel discussions on business management problems. One of the seminars will cover bid depository establishment and operation.

Opening session of the convention is scheduled to get under way at 10 a.m. on Monday, June 1. Among other things, this session will hear greetings from the Refrigeration & Air Conditioning Contractors Association, by T. C. Alexander, president, and from the Mechanical Contractors Association of America, by William P. Scott, Jr., president.

Dr. Peale, pastor of Marble Collegiate church in New York City, will address this session, speaking on "Success Through Right Thinking."

A feature of the second session Monday afternoon will be a talk by the UA's Schoemann on "Where Labor Stands Today."

Among events on the program for Tuesday morning, June 2, are talks by Howard L. Spindler, president of the Plumbing-Heating-Cooling Information Bureau; William R. Phillips, president, National Association of Surety Bond Producers; and Jerome Fenton.

Spindler will speak on "Your Bureau In Action" and Phillips will discuss "Surety Bonds In Construction Contracting." Fenton's subject is "Labor, Contractors, and the NLRB."

Tuesday afternoon will be devoted to the six business seminars. Three will begin at 1:30 p.m. and three at 3:30 p.m. Six different assembly rooms in the new air conditioned Exhibition Hall have been selected for these sessions. Subjects to be covered are:

1. "Money — and Where to Find It." This session features a panel of financial experts who will attempt to show how a plumbing-heating contractor can improve his cash position by finding appropriate banking and finance sources which meet his long-term cash needs.

2. "Pension and Security Planning." This session will feature I. Austin Kelly, president of the National Employee Relations Institute, who will discuss new ideas in pension and profit-sharing plans, with special emphasis on tax-free benefits available to owners of small and medium sized companies.

3. "Selling the Commercial Job Without Bidding." Emphasis here will be on selling and public relations techniques used by larger, commercial contractors in obtaining contracts without bidding or in situations where bidding is limited to invited bidders. Panel will demonstrate that large contracts can be won on factors not limited solely to bid price, it was pointed out.

4. "Establishing and Operating a Bid Depository." This panel will report the latest experiences of bid depository operations and will feature George P. Lamb, NAPC legal counsel who has recently made a new study of the subject.

5. "Spotting the Profits In Remodeling."

6. "New Problems—and Solutions—In Waste Disposal."

At the Wednesday morning session, June 3, Sen. Randolph will speak on "The Plumbing Contractor and Politics." Most of this and the Wednesday afternoon session will be devoted to presentation of various reports, including one by the Inter-Industry Liaison Committee.

The Thursday morning (June 4) session will be held in the Auditorium which adjoins the Exhibition Hall. There will be additional committee reports, unfinished and new business, and election of officers and directors.

An extensive social program also has been planned, beginning with the traditional reception and cocktail party, this time on Sunday afternoon, May 31, in the exposition hall, while exhibits are open.

A two-hour variety show will be staged in the Auditorium Tuesday night, June 2, with singer Georgia Gibbs and comedian Frank Fontaine as stars. Wednesday evening will be free for the usual state and regional association get-togethers. The convention will wind up Thursday evening, June 4, with a banquet and dance at the Hotel Deauville.

In addition, there will be entertainment daily from the center stage in the midst of the exposition at the noon hour.

From Sunday, May 24, to the following Sunday, there will be committee meetings, board of directors' meetings, and executive secretaries' and presidents' and secretaries' conferences. The new NAPC board and new committee chairman will meet Friday, June 5.

Formal opening of the exposition is set for 1 p.m., May 31.

Among exhibitors are Plumbing & Heating Div., American-Standard; Barnes Mfg. Co.; Bell & Gossett Co.; Combustion Engineering, Inc.; Crane Co.; Day & Night Mfg. Co.; Fairbanks Morse & Co.; General Electric Co. (Louisville, Ky.); Hotpoint Co.; The Imperial Brass Mfg. Co.; Insto-Gas Corp. Johns-Manville Corp.; Lake Chemical Co.; H. C. Little Burner Co., Inc.; Nibco, Inc.; Radiator Specialty Co.; Home Products Div., Rheem Mfg. Co.; A. O. Smith Corp.; Westinghouse Electric Corp. (Mansfield, Ohio); John Wood Co.

NAPC and NILFP Plan Meeting Innovations

DETROIT — Innovations—voting machines in one case and closed-circuit TV in the other—are planned for two association conventions this year.

At the 77th annual convention of the National Association of Plumbing Contractors in Miami Beach, Fla. June 1-4, something new is scheduled in NAPC convention voting with the availability of voting machines.

"This will speed up the vote-counting and voting procedure and will result in a more streamlined voting operation," the association said.

And the National Institute of Locker & Freezer Provisioners announced that barring unforeseen difficulties in completing arrangements now being made, delegates to its 20th annual national convention will enjoy close-up televiewing of important convention activities.

Said the institute: "The addition of television coverage of selected sessions and meetings will mean clear viewing of exhibit and demonstration type activities for every member of the audience.

The group's parley will be in Cincinnati's Netherland Hilton hotel Sept. 13-16.

WHAT . . WHEN . . WHERE

—A Guide to Coming Events of Interest

National Association of Plumbing Contractors Convention and Exposition
May 31-June 4, Miami Beach, Fla.

Institute of Appliance Manufacturers
June 1-3, Netherland-Hilton hotel, Cincinnati.

National Association of Retail Grocers Convention
June 21-25, Navy Pier, Chicago.

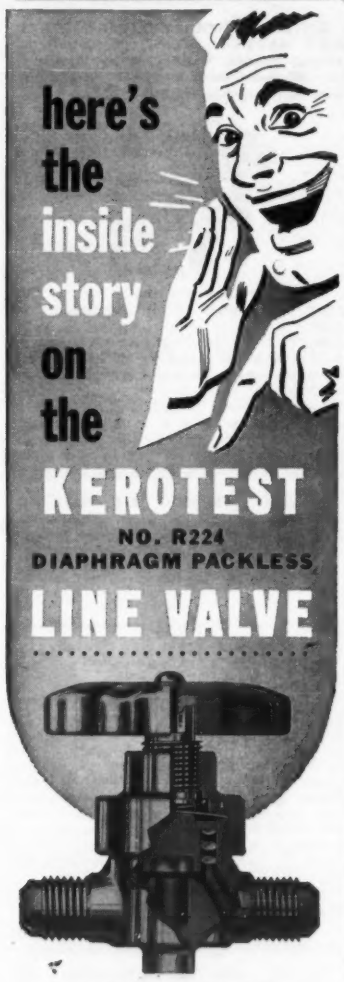
Air Pollution Control Association Meeting
June 21-26, Statler-Hilton hotel, Los Angeles.

American Society of Heating, Refrigerating & Air Conditioning Engineers
June 22-24, Lake Placid Club, Lake Placid, N. Y.

Alwin B. Newton of York Named Vice President

YORK, Pa.—Alwin B. Newton, director of engineering for York Div. of Borg-Warner Corp., has also been named a vice president of the company.

The appointment was in keeping with the many contributions Newton is making to engineering and research programs for the firm.



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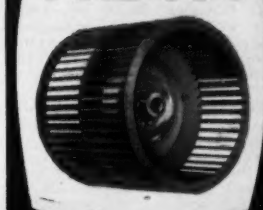

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Phone or write . . .

STILES-KARLSONITE CORPORATION
1552 Grand Avenue, Waukegan, Illinois

*Reg. U.S. Pat. Office

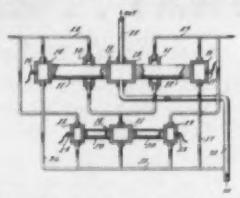
WATER CONDITIONING COMPOUNDS AND EQUIPMENT

PATENTS

Week of Jan. 27

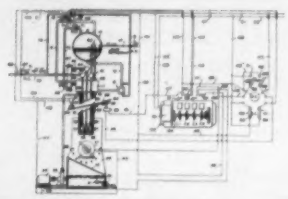
2,870,610. THERMOELECTRIC HEAT PUMPS. Nils E. Lindenblad, Princeton, N. J., assignor to Radio Corp. of America, a corporation of Delaware.

1. A thermoelectric heat pump comprising a number of bodies, some of said number being formed of material having dissimilar thermoelectric properties from the material of the other of said number, junction means joining said bodies of dissimilar thermoelectric material in a series-connected chain to



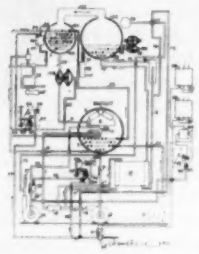
provide alternate hot and cold junctions therebetween, a number of auxiliary cooling devices, said number being equal to the number of said bodies. . . .

2,870,612. ICE-MAKING APPARATUS. Milton W. Garland, Waynesboro, Pa., assignor to Frick Co., Waynesboro, Pa.



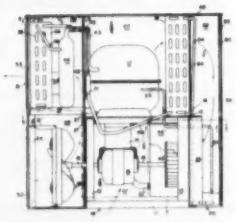
6. A defrosting control for sensing the presence of ice on a member and for operating control means as soon as the ice has been removed from the member, comprising a shaft rotatably mounted adjacent to the member, a finger rigidly connected to the shaft and extending laterally from the shaft and positioned to engage the member after rotation of the shaft from a first position to a second position, the engagement of the finger with ice on the member preventing such rotation, an arm rigidly connected to the shaft. . . .

2,870,613. CONTROL ARRANGEMENT FOR ABSORPTION REFRIGERATION SYSTEM. Louis H. Leonard, Jr., Syracuse, N. Y., assignor to Carrier Corp., Syracuse, N. Y.



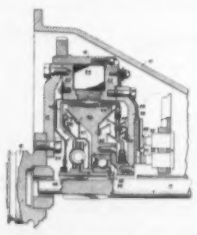
4. In an absorption refrigeration system, the combination of a shell, an element in said shell cooperating therewith to form an absorber, a second element in said shell cooperating with the shell to form an evaporator, a second shell, a member in the second shell cooperating therewith to form a generator, a third shell, a member in said third shell cooperating therewith to form a condenser, the generator, condenser, evaporator and absorber being placed in a closed circuit. . . .

2,870,614. SELF CONTAINED AIR CONDITIONING UNITS. William E. Renner, Casenovia, and William A. Arzberger, North Syracuse, N. Y., assignors to Carrier Corp., Syracuse, N. Y.



1. Air conditioning apparatus comprising a supporting frame, a casing having opposed side walls and an end wall forming a compartment, said casing being attached to one side of the frame, a prime mover mounted on said frame with the power shaft thereof extending within said compartment, an evaporator supported on the opposed side walls of said casing above the power shaft, a fan mounted on that portion of the power shaft within said casing, a compressor and condenser mounted on the frame above said prime mover. . . .

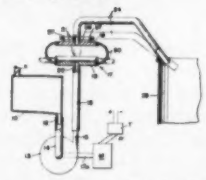
2,870,888. MAGNETIC CLUTCH. Andrew S. Gill, Jr., South Euclid, Ohio, assignor to Eaton Mfg. Co., Cleveland, Ohio.



1. A magnetic clutch comprising a pair of driving members and a driven member rotatable relative to said driving members, a first of said driving members including a pair of axially spaced pole portions and an electromagnetic coil therebetween for providing a magnetic field, a second of said driving members located concentrically within said first driving member and separated therefrom to provide an opening, said driven member including spaced plate supporting means disposed axially on opposite sides of said second driving member and a sleeve portion located in said opening and secured in spaced relation to each of said driving members. . . .

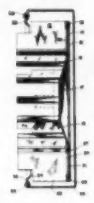
Editor's Note: Patents described here have been selected from the "Official Gazette" of the United States Patent Office. They offer only a brief summary of each invention. In some instances only the first part of the digest is presented.

2,870,941. ADJUSTABLE OVERFLOW LIQUID DISPENSING SYSTEM. Virgil Kenneth Steidley, Mansfield, Ohio, assignor to Gorman-Rupp Industries, Inc., Bellville, Ohio.



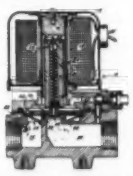
1. In a system for dispensing a measured amount of liquid into a receptacle, a supply reservoir containing liquid to be dispensed, an adjustable volume chamber positioned above said reservoir, a pump connected to said reservoir and chamber for delivering liquid from said reservoir to said chamber during a predetermined operating time interval in a measured amount in excess of the volume of said chamber for any adjusted position of said chamber, and overflow means connected to the top of said chamber for conducting the overflow liquid from said chamber to said receptacle.

2,870,959. BLOWER WHEEL. Wayne A. Giddings, Cedar Rapids, Iowa, assignor to Amana Refrigeration, Inc., Amana, Iowa.



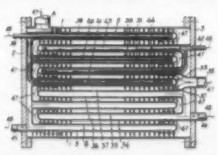
1. In a blower wheel, a circular metallic base plate provided with circumferentially spaced radial slots, and a molded integral blade structure mounted on said base plate comprising blades disposed radially of said plate and having base portions extending through said slots with base flanges engaging the opposite faces of said plate. . . .

2,870,986. AMPLIFYING MEMBER FOR PILOT-OPERATED VALVES. Frank J. Vargo, St. Louis County, Mo., assignor to Jackes-Evans Mfg. Co., St. Louis, Mo.



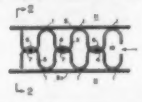
1. An amplifying member for pilot-operated valves, comprising a plate-like support member having opposed faces and a side edge; a flexible diaphragm positioned in contact with one of said faces coextensive therewith; a pilot-port extending through the support member and the diaphragm; a groove in said one face of the support member; an aperture through the support member in communication with the groove; and an aperture through the diaphragm in communication with the groove at a different location therealong.

2,870,997. HEAT EXCHANGER. Sten Soderstrom, Sollentuna, Sweden.



4. Heat exchanger comprising a housing including opposite end walls and a side wall therebetween, a first multiple tube comprising an outer tube secured at one end thereof to a first end wall of said housing, the opposite end of said outer tube being turned inwardly to form the corresponding end of a first inner tube within said outer tube, the opposite end of said first inner tube being located in the proximity of but in spaced relation from that end wall of said housing to which said outer tube is secured, said opposite end of said first inner tube being turned inwardly to form the corresponding end of a second inner tube within said first inner tube. . . .

2,870,998. HEAT EXCHANGER WALLS WITH COUPLED SINUOUS FIN ELEMENTS. Thomas L. Woolard, Wellsville, N. Y., assignor to The Air Preheater Corp., New York, N. Y.

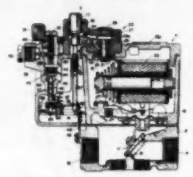


3. A heat exchanger envelope including metallic plates spaced apart to provide walls for a fluid passageway therebetween, a plurality of sinuous wires secured to each wall and adapted to extend perpendicularly between metallic plates to provide parallel rows of heat exchange elements having alternate rows secured to opposing passage walls. . . .

2,870,999. HEAT EXCHANGE ELEMENT. Sten Hilding Soderstrom, Sollentuna, Sweden.

A heat exchanging device, comprising in combination with a tube, a flat band of the same material as the tube having its inner longitudinal edge wound helically in direct contact with the surface of the tube and united with the tube by means of a continuous weld joint along said edge with same material as the band and tube. . . .

2,871,311. COMBINATION VALVE AND SAFETY PILOT. Raymond P. Flagg, Golden Valley, Minn., assignor to Minneapolis-Honeywell Regulator Co., Minneapolis, Minn.



1. A combination main valve and pilot valve and switch comprising a main valve, a pilot valve, a first plunger for actuating said pilot valve, a pivoted lever operably engaging said plunger, means biasing said plunger in a direction to open said pilot valve, stronger means for biasing said lever in a direction to close said pilot valve, condition responsive means capable of holding said lever in but incapable of moving it to valve open position. . . .

2,871,340. METHOD OF MAKING BLOWER WHEELS. John H. Wessel, Los Angeles, Calif., assignor to Utility Appliance Corp., Los Angeles, Calif.

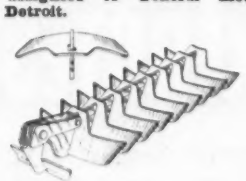
A method of securing together an assembly of fan components comprising a plurality of circumferentially spaced, longitudinal vanes having at their ends tabs which project through openings in mounting members at the ends of said assembly, each of said vanes having two of said tabs at each end thereof, said method including the steps of: contacting the projecting portions of said tabs at each end of each of said vanes with electrodes; passing electric current from one of said electrodes to the other through the tabs contacted by said electrodes....

DESIGNS

184,308. AIR CONDITIONER OR SIMILAR ARTICLE. David C. Eisendrath, Chicago, Ill., assignor to Cory Corp., Chicago, Ill.

184,310. ICE TRAY GRID. Arthur J. Frei and Raymond C. Davis, Dayton, Ohio, assignors to General Motors Corp., Detroit.

184,311. ICE TRAY GRID. Arthur J. Frei and Raymond C. Davis, Dayton, Ohio, assignors to General Motors Corp., Detroit.



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POSITIONS WANTED

GRADUATE MECHANICAL engineer, 23 years' experience in all phases of refrigeration engineering. Includes household, commercial, and air conditioning application; research and development of component parts, rotary and reciprocating compressors. Desire position with manufacturer as design and/or project engineer. BOX A6265, Air Conditioning, Heating & Refrigeration News.

FIELD SERVICE engineer—13 years' experience in commercial refrigeration and air conditioning, two years field service engineer for large commercial refrigeration manufacturer, served both national and regional accounts. Owned and operated service shops on east and west coasts. Desire location in western states. Age 33. Married. BOX A6266, Air Conditioning, Heating & Refrigeration News.

GENERAL MANAGER of leading American air conditioning and refrigeration distributorship in Caribbean area is desirous to relocate in the U. S., Britain or Continent. Age 32, British, qualified engineer, fluent German with 4 years' executive experience responsible only to Board of Directors for management, sales, design, estimates, installation, buying, contracts and company's operation. Total of 11 years' engineering background. Interested negotiate connection with high grade manufacturer. Best references on mutual interest. BOX A6267, Air Conditioning, Heating & Refrigeration News.

POSITIONS AVAILABLE

SALES ENGINEERS. Required by nationally known manufacturer for Boston, Cleveland, Detroit, Indianapolis, Memphis, Milwaukee, Pittsburgh, Sacramento, San Diego, St. Louis and Toronto. Associate yourself with advanced design products with highly respected brand name and broad market coverage. Real earning opportunity for experienced salesmen presently calling on engineers, contractors and dealers. Write about yourself and experience including territory you now cover. Write to D. G. Merrill, ACME INDUSTRIES, INC., Jackson, Michigan.

ENGINEERING GRADUATE with mass production background, 5-10 years' experience in time study, plant layout, methods, etc. Experience in gas regulator and gas meter field desirable but not essential. Salary commensurate with ability and experience. To age 40. Send resume including present salary, to: Employment Manager, ARKLA AIR CONDITIONING CORP., Evansville 7, Ind.

MANUFACTURER'S REPRESENTATIVE for atmospheric and mechanical redwood cooling towers. 3 to 60 tons and multiples. For Kansas, Missouri, Arkansas, Tennessee, Northern Alabama and Georgia, Carolinas, Kentucky. Prefer experienced men. Firm established since 1949. Address reply to: A. J. BOND, C.P.A.—3400 Montrose Blvd. Room 306—Houston 6, Texas.

TERRITORIES OPEN for new, superior, tested and proven F-K Scale Solvent, Algaecide and Water Treatment. Letterhead reply to F-K COMPANY, 605 S. Peoria, Tulsa, Oklahoma. Give full resume in first reply.

MANUFACTURERS' REPRESENTATIVES wanted by leading manufacturer of commercial refrigeration equipment, in business 65 years. Some territories still open east of Mississippi. Protected territories. Commission basis. Competitive prices. Write WARD REFRIGERATOR CO., INC., 6501 So. Alameda St., Los Angeles 1, California.

ENGINEER REFRIGERATION Controls—To head a department on design and development of commercial refrigeration control valves of all types; national corporation with midwestern manufacturing and engineering facility; salary and bonus commensurate with work background and ability. Send full details, qualifications and personal data to BOX A6172, Air Conditioning, Heating & Refrigeration News.

DESIGN, PRODUCT, application engineer—Leading manufacturer expanding line of residential heating and air conditioning equipment has positions for project design engineers: (1) Design engineer for residential heat pump and air conditioners, 2, 3, 5 horsepower. (2) Application engineer for residential gas furnaces. Must be college graduate with two years' experience. All replies held in strict confidence. Mail resume to BOX A6268, Air Conditioning, Heating & Refrigeration News.

REFRIGERATION SERVICEMAN wanted—Must have 10 years' experience in service and installation of commercial refrigeration and air conditioning. Guarantee 40 hours per week, year round. State qualifications, experience, age, and etc. Well-established firm in Middle West. BOX A6269, Air Conditioning, Heating & Refrigeration News.

REFRIGERATION ENGINEER for product engineering section of small L. I., New York, company. Prefer man with experience as product or production engineer in packaged industrial products including refrigeration and compressed air. Resume and salary requirements BOX A6270, Air Conditioning, Heating & Refrigeration News.

EQUIPMENT WANTED

GENERAL ELECTRIC compressors, condensing units and parts, new or used and repairable. State model numbers, horse-power, etc. Need other makes also. UNITED REFRIGERATION CORPORATION, 514 W. 12th St., Los Angeles 15, California.

EQUIPMENT FOR SALE

RESIDENTIAL & COMMERCIAL air conditioners—air cooled 1 ph.—230V. 2 hp. highside with horiz. evap. $357.00; 3 hp.—$489.00; 4 hp.—$684.00; 5 hp.—$761.00. 2 hp. self contained horiz. units $306.00; 3 hp.—$504.00; 4 hp.—$599.00. Additional 5% discount for quantities of 5 units one order to one destination. ARCTICAIRE MFG. CO., 2201 Grand—K. C., Mo., Telephone BA 1-7055.

FOR SALE: 500# Vogt tube-ice machine, with 7½-hp. compressor. Good as new—used very little. Call or write: EMERSON McNEIL, 1001 Torrey Bldg., Duluth, Minnesota.

BUSINESS OPPORTUNITIES

A REAL Buy: Commercial refrigeration & air conditioning sales & service business in Southern California for sale by owner fully equipped and well established going business including all trucks, tools, parts and equipment, also buildings if desired. For complete information write BOX A6271, Air Conditioning, Heating & Refrigeration News.

MANUFACTURING FACILITIES for sale or lease at Houston, Texas. Small but modern and well tooled for 10 ga. and lighter sheet metal. Ample production and sales personnel available. Currently producing heat pumps for very active local market. Please reply to BOX A6272, Air Conditioning, Heating & Refrigeration News.

MISCELLANEOUS

CONTROLS & RELAYS repaired like new. UNITED CONTROL REPAIR COMPANY, new address: 151 E. 126th Street, New York 35, New York.

ATTENTION REFRIGERATION Servicemen: Would you be interested in saving from 25 to 50% on many standard refrigeration and air conditioning parts and supplies? Send for our free circulars and catalogs. WALTER W. STARR, 2833 Lincoln Ave., Chicago 13, Illinois.

Servicing Automobile Air Conditioners

(Vol. 4 — 1959 Models)

BY C. DALE MERICLE

With this issue we continue the fourth series of articles describing service procedures on automobile air conditioning units. In these instalments 1959 models of the leading "independents" and automobile manufacturers are being described in detail.

As with the previous series, these articles are intended for the refrigeration serviceman who has a good grounding in fundamentals backed with practical experience.

Previous articles covering earlier models of many makes of units are available from the NEWS in manual form as Vols. 1, 2, and 3 of "Servicing Automobile Air Conditioners." Vol. 3 being devoted to 1958 models.

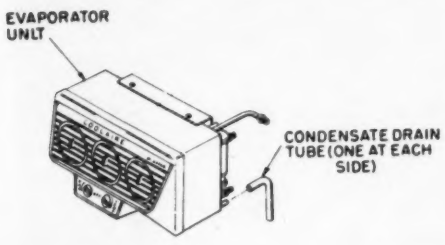

FIG. 1—Evaporator case of 1959 MoPar unit made by Airtemp.

MOPAR

Airtemp Div.
Chrysler Corp.
Dayton 1, Ohio

The under-dash type air conditioner being manufactured by Airtemp in 1959 is marketed under the "MoPar" name and is designated as the "Model D Cool Aire" unit. No unit is offered in 1959 under the "Airtemp" name.

The MoPar Model D is essentially the same as the 1958 Model C and the 1958 Airtemp Model 2931-3 insofar as basic servicing is concerned.

Compressor is mounted on the engine and driven through a magnetic clutch which is thermostatically controlled, condenser is located in front of the car radiator, and the evaporator assembly is suspended beneath the dash.

Refrigerant-12 is employed.

Compressor

The Airtemp V-2 compressor is standard with the MoPar Model D system. This is a two-cylinder V-type compressor.

A magnetic clutch compressor drive is standard equipment.

Condenser

Condenser is mounted in front of car radiator.

A combination receiver and sight glass is located in the engine compartment on the fender side shield. The receiver is fitted with a fusible plug.

Evaporator

Evaporator assembly (Fig. 1) suspended beneath the dash includes the evaporator coil, thermostatic expansion valve, fan, air outlets, and controls.

Three round plastic grilles which can be adjusted through a full 360° to direct discharge air are mounted on the front of the case. The 1958 units employed square plastic grilles.

Controls

Controls are mounted on the lower edge of the evaporator case in the MoPar Model D unit.

Two are provided. One is a three-speed control for the fan. Other control permits adjustment of the thermostat which cycles the magnetic clutch and compressor in response to the thermostat setting.

SERVICE HINTS

Evacuating System

Although a separate vacuum pump can be used for evacuating the system following initial installation or opening for repairs, the manufacturer's recommendation calls for simply operating the unit with the car engine for approximately five minutes.

Charging System

The MoPar unit is charged through the low side with Refrigerant-12 in the vapor state in the usual manner.

A full charge is approximately 2¼ lbs.

Testing System

After installation the system should be checked to determine operating discharge and suction pressures, the manufacturer advises. This will require a high pressure gauge with a range of 0 to 400 p.s.i. and a suction pressure gauge with a range of 0 to 100 p.s.i.

With the gauges installed and system thermostat set for maximum cooling and blower at high speed, the engine should be operated at 1,200 r.p.m. or equal to 25 m.p.h. for 15 minutes. The gauges should read approximately as follows:

Ambient Temp. (F.)	Discharge Pressure (p.s.i.g.)	Suction Pressure (p.s.i.g.)
95°	195	30
70°	175	25
60°	160	20

The manufacturer cautions, however, that the gauge readings can vary considerably with conditions. At high ambient temperature and low engine speed a discharge pressure of 350 p.s.i.g. would not necessarily indicate an operating difficulty, it is stated.

Trouble Shooting

Service complaints and procedures common to most under-dash type systems achieving temperature control by means of a thermostat cycling a magnetic clutch will also apply to the MoPar Model D unit.

Allied Supply of Dayton Takes Over Old Plant

THIS WAS once part of plant in which street railway equipment was manufactured. Now it is the main showroom of new facilities opened by Allied Supply Co., Inc., Dayton wholesaler of air conditioning and refrigeration parts and supplies. When the wholesale firm decided it needed more room, it discarded plans for a new building, took over an old plant near downtown Dayton. Much of the renovation work, including a good share of the wood paneling and decorating was done by Jack and Bill Homan, principals in the company, and their staff. In right foreground is revolving display of special items.

WITH NEW quarters, Allied Supply principals thought countermen should be dressed up—so they all wear red jackets of the same design. It also helps to identify an employe of the company to customers. High ceilings in old plant structure were minimized by use of black paint and fluorescent lighting.

SECOND FLOOR in area occupied by Allied Supply is occupied by offices, warehouse space, and a meeting room, shown here, which will be used for sales meetings of the company, and by industry organizations in the area.

Welbilt Sales Up, Profit Down for First Quarter

NEW YORK CITY—Although sales of Welbilt Corp. in the first quarter rose 13% over the like year-ago period — from $3,570,690 to $4,051,644, net profit dropped from $129,942 to $8,110, it was reported.

Alexander P. Hirsch, chairman of the board, said the profit decline was due primarily to disposition at very low prices of large quantities of air conditioners from last year's production.

All of last year's models have been sold, Hirsch reported, and sales of new models were well above last year's volume. He added that second-quarter profits would reflect an increase over last year.

Carloss Retired—But Not for Very Long

SALEM, Ohio — On Dec. 31, 1958, Harry Carloss, executive vice president of The Deming Co. here, retired and went home to Memphis, Tenn.

But retirement to Harry Carloss didn't mean complete retirement from the business world, because Carloss now has assumed active leadership of The Carloss Pump Co., Memphis, a distributor of Deming commercial and industrial pumps in the Tennessee area.

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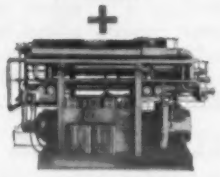

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